



Commercial and Industrial packaging and packaging waste EPR scheme in Italy

HOW DOES THE SYSTEM WORKS

July 2024





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Executive Summary

This paper aims to illustrate and present the comprehensive characteristics of the Italian Extended Producer Responsibility (EPR) scheme specifically designed for packaging and packaging waste in the Commercial and Industrial (B2B) sectors. The document delves into a thorough analysis, detailed methodologies, significant results, and the overall performance of the CONAI Producer Responsibility Organisation (PRO) system of its Packaging Material Producer Consortia and the self PROs , which manage this specific packaging stream.

By examining the operational and strategic aspects of the CONAI system, the paper introduces an "**all-in**" model. This model is conceptualized to integrate and enhance the synergies between commercial and industrial and household streams related to packaging. The objective is to foster a more transparent, effective, and efficient system.

This unified approach is intended to be shared among all stakeholders involved in the packaging lifecycle, including, businesses, and waste management operators. By doing so, it aims to create a coherent and collaborative framework that ensures better management of packaging and packaging waste, ultimately benefiting the entire supply chain. The proposed model seeks to address and overcome existing challenges, promoting a more sustainable and streamlined process that aligns with the principles of **Extended Producer Responsibility**.

Indeed, the Italian case study has demonstrated the great performances in terms of efficiency and effectiveness of a single, centralized organization managing household and C&I packaging and packaging waste nationwide. Those represents the holistic approach of different management models supervised by one organisation, which endorse transparency, cost efficiency and reliability at national and international levels.

The national Framework

Legislation and main principles

The national regulatory framework governing packaging and packaging waste in accordance with European directives (specifically Directive 1994/62/EC, lastly updated by Directive 2018/851/EC and the Directive 2008/98/EC lastly updated by Directive 2018/852/EC) is codified in Legislative Decree 152/2006, commonly known as the Testo Unico Ambientale (TUA).

Over the years, the domestic regulatory landscape has undergone significant transformations due to the enactment of various European directives. These directives have played a pivotal role in shaping policies and regulations related to environmental sustainability and waste management practices.

Despite these changes, two core principles of the management model have remained steadfast:

1. **Extended Producer Responsibility (EPR):** Anchored in the "polluter pays principle", EPR holds manufactures (packaging producers) and users accountable for the "proper and effective environmental management of packaging and packaging waste resulting from the consumption of their products" (Article 221). Manufactures (packaging producers) bear the responsibility of advancing the overarching objectives of recycling and recovery as outlined in the prevailing legislation. The "polluter pays principle" is a fundamental key point and guiding principle which underpins the concept of environmental accountability, ensuring that those who cause pollution or generate waste bear the associated costs. By holding manufactures (packaging producers) and users responsible for managing packaging and packaging waste, this principle promotes sustainable practices and encourages the adoption of eco-friendly solutions throughout the product lifecycle.
2. **Shared responsibility** and cooperation among all economic operators involved in the management of packaging waste, whether public or private.

Furthermore, the regulatory framework emphasizes the importance of collaboration between stakeholders, including government agencies, industry players, and environmental organizations, to achieve the overarching goals of waste reduction, resource efficiency, and environmental protection.

In summary, while the regulatory landscape has evolved in response to changing environmental challenges and legislative mandates, the principles of extended producer responsibility and the "**polluter pays**" principle, alongside the concept of **shared responsibility** and cooperation among all economic operators, have remained integral to the sustainable management of packaging and packaging waste within the national context.

The Italian EPR scheme

CONAI, the National Packaging Consortium, represents a private, non-profit Producer Responsibility Organisation that serves as a measure to which packaging manufactures (packaging producers) and fillers ensure the recycling of packaging waste, as established by law. Integral to the national packaging management system, CONAI, boasting approximately 700,000 members, plays a pivotal role in achieving national recycling targets, stepping in where market mechanisms prove insufficient and come into force with his **subsidiary role**.

The CONAI Consortium has been entrusted with significant legal responsibilities in the field of environmental matters, carrying out relevant tasks mandated by current legislation.



From the figure above, CONAI is entrusted with the crucial responsibility of implementing extended producer responsibility principles, which entails collectively bearing the costs associated with the proper end-of-life management of packaging distributed within Italy.

This entails determining the CONAI environmental contribution's value based on modulation factors such as the packaging material and weight, and according to specific design requirements like reusability and recyclability base and on the net cost criteria.

The regulation mandates CONAI to distribute cost burdens " among its obliged companies members, including manufactures (packaging producers) and users, covering expenses related to take back for recycling of (separated) collected packaging waste , and subsequent transportation, sorting, and recycling operations. Furthermore, CONAI is tasked with covering the costs of awareness and reporting

activities . These financial resources are generated through the definition and collection of the CONAI environmental contribution (CAC), which is primarily allocated to financing the collection of primary packaging or other materials destined for public disposal services.

At the operative level, CONAI oversees the activity of **7 Packaging Material Consortia** representative one for each materials used to produce packaging:

- **RICREA** (*steel*)
- **COMIECO** (*paper and cardboard*)
- **COREVE** (*glass*)
- **CIAL** (*aluminium*)
- **RILEGNO** (*wood*)
- **BIOREPACK** (*bio-plastic*)
- **COREPLA** (*plastic*)






The Packaging Material Consortia are likewise private, non-profit organizations of packaging manufactures (the “producers”) that take back the (separated) collected packaging waste, for the subsequent sorting and recycling, or recovery of across the country, focusing on various materials. These consortia function as subsidiaries to the market, working together with, local authorities and waste management operators to ensure nationwide efficient, effective and sustainable management of packaging materials employing innovative strategies and technologies.

The law offers packaging manufacturers alternatives to participating in the CONAI System. They can either "organize the management of their own packaging waste independently throughout the country" (Article 221, paragraph 3, letter a) or establish "a system for the return of their own packaging" (Article 221, paragraph 3,

letter c). Currently, focusing on the Commercial and Industrial packaging waste stream, we can observe **3 Self-PROs**.

Down here a brief description of the 3 system:

	<p>1) P.A.R.I. developed by Aliplast S.p.A. , that manages flexible polyethylene (PE).</p>
	<p>2) CO.N.I.P., that manage plastic boxes and pallets</p>
	<p>3) ERION Packaging by ERION that manages paper, plastic, and wood from Electrical and Electronic Equipment (EEE) and Batteries m</p>

According to the current regulations, CONAI system and the Self-compliance PROs collaborate to establish a national framework program agreement with entities such as the National Association of Italian Municipalities (ANCI) and the Union of Italian Provinces (UPI), or with the management bodies of the relevant geographical areas. This collaboration aims to ensure coverage of efficient and necessary costs associated with local authorities separate collection public services, transportation, sorting, and other preliminary operations for packaging waste. Additionally, it ensures the availability of resources for collecting the waste itself for subsequent recycling and recovery processes and in the meantime set the burdens and thresholds of C&I out of public waste management

Obligated companies

According to the national legislation, there are 2 different type of obliged companies involved in the Commercial and Industrial packaging waste scheme.

CONAI, at his level, has been entrusted with the oversight of **manufactures (packaging producers)** and **fillers (packaging users)** obligations within the Italian Extended Producer Responsibility (EPR) framework since 1998, encompassing both the Commercial & Industrial (C&I) and household streams.

- **Manufactures (packaging producers):** include packaging material supplier, manufacturers/converters /importers of packaging raw materials and empty packaging.
- **Fillers of packaging,** include retailer, distributor, fillers, packaging end users and importers of filled packaging

Under the current regulations, packaging manufacturers must designate specific sites for the take back of used packaging, ensuring collaboration with waste management service providers. This requirement supports Italy's commitment to sustainable waste management practices and the effective implementation of Extended Producer Responsibility (EPR) principles. It's important to note that Legislative Decree 152/06, Article 221, requires packaging manufacturers to identify specific delivery points for the disposal of used packaging materials. In practice, this collaboration means that packaging users are responsible for collecting and transporting materials to the designated sites, while manufacturers handle the subsequent recycling or disposal processes. Management activities for such packaging waste primarily fall under the purview of private waste management operators in the market. In contrast to the complexities often associated with packaging waste management in urban separate collection systems, these operations are characterized by a relatively streamlined process of collection, sorting, and recycling.

In response to these regulatory requirements, the CONAI's Consortia such as **COMIECO**, **COREPLA**, **RILEGNO**, and **RICREA** have proactively established an extensive network of platforms spanning the national territory in order to give the opportunity to C&I packaging manufacturers/fillers to deliver their packaging waste. These platforms serve as vital disposal hubs, enabling companies to dispose of their packaging waste free of charge (due to the fact they already pay EPR fee), offering an attractive alternative to private collection services and or operators facilities.

EPR fee for commercial and industrial packaging

The EPR fee is paid during the initial transfer of empty packaging from manufactures to the first filler, in addition and separately to the packaging's sales price, full tracked in each invoice (e-invoice included)

At the beginning of the 2024, the total CONAI affiliates/members are **681.392**, divided by:

- **99% Fillers**
- **1% Manufacturers**

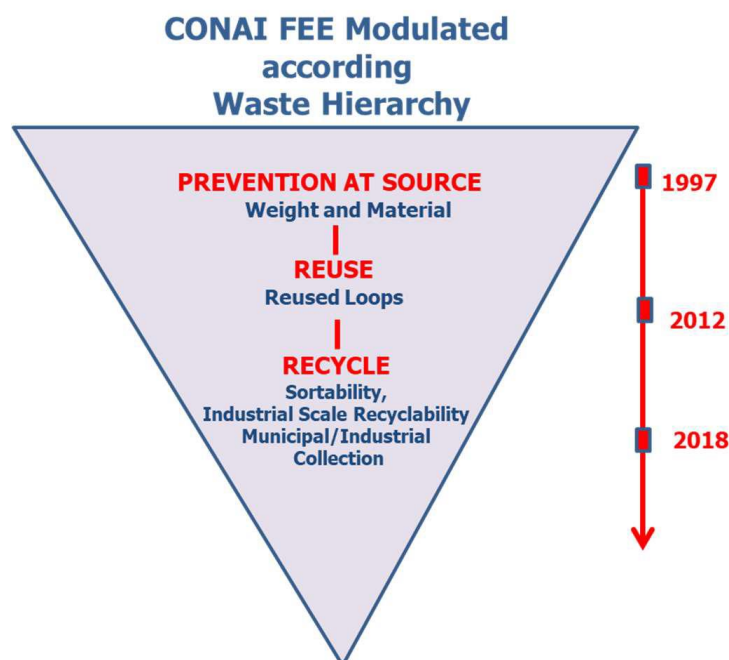
The declare party are mainly manufactures and importers, which corresponds to ~ **5%** of the total membership, which means more **transparency** and **cost efficiency** for the entire system.

It's the responsibility of the filler to pay the EPR fee to the producers, who then transfer and declare it to CONAI. Each packaging item introduced to the market for the first time must be traceable, and producers are mandated to declare the discharge of payment and report it to CONAI, usually on subsequent invoices indicating that the EPR fees have been settled.

In cases involving the introduction of empty or filled packaging from abroad to the Italian market, or scenarios where there's no initial transfer, the EPR fee falls on the company placing it for the first time on the market (the user of filled packaging). This obligation applies irrespective of when or how the packaging was purchased, unless the EPR fee has already been paid by the foreign company voluntarily registered with CONAI.

The fees associated with Extended Producer Responsibility (EPR) apply to both Commercial & Industrial packaging placed on the market and packaging within the household stream. These EPR fees are established for each specific packaging material¹.

Eco-modulation, a practice aimed at incentivizing environmentally friendly packaging solutions, has been used by CONAI as a strategic tool for promoting **Eco-design (upstream)**.



¹ <https://www.conai.org/en/businesses/environmental-contribution/>

Following the waste hierarchy established by EU, has been introduced as an economic levy in order to minimize the environmental impact of packaging and waste through a modulation based on:

- **reduction at source, by metric fixed on €/ton (less ton less €)²;**
- **re-usability and Re-cyclability requirements³.**

These fees vary based on eco-modulated principles, taking into account factors such as **recyclability, reusability, origin, and adherence to the net cost principle**. This ensures that packaging manufactures are incentivized to adopt sustainable practices and contribute to the overall reduction of environmental impact associated with packaging materials in the C&I sector.

LOOP	TYPE OF PACKAGING	% REDUCED FEE amount
Re-used	Wooden pallet	40
Accountable and monitored Re-usable	Wooden pallet	90
	Glass bottle	85
	Plastic crates and basket	93
Pooling	All	100
Site2Site	All	100

Regarding the CONAI eco-modulation and diversification, in the table below are represented the level which corresponds to **C&I packaging material for recycling**.

² <https://www.conai.org/en/businesses/environmental-contribution/>

³ <https://www.conai.org/en/businesses/environmental-contribution/special-cases/>;

Material	€/ton, (eco-modulated)
PLASTIC	Recyclability
	24,0 (A1.1)
	90,0 (A1.2)
	220,0 (A2)
	441,0 (B2.1)
	589,0 (B2.2)
	650,0 (B2.3)
PAPER	65,0 (1, fiber > 80%)
STEEL	5,0
WOOD	7,0
ALUMINIUM	12,0

CONAI has paid particular attention to packaging designed for multi-year use, reserving for them simplified or facilitated formulas for the application of the EPR fees. This process has been carried out with the constant involvement of business associations and representative companies from the relevant industrial or commercial sectors.

CONAI approaches in the management of commercial and industrial packaging and packaging waste

According to the CONAI tools for **downstream**, it's important to highlight that exist **3 approaches** of managing Commercial & Industrial packaging waste in which the Consortia are involved in different ways and capacities that are hinged in the fee eco-modulation tool:

a) Reuse

b) Preparation for Reuse (Regeneration)

c) Recycling

FOUR PACKAGING MATERIAL CONSORTIA ARE DIRECTLY INVOLVED IN MANAGING INDUSTRIAL AND COMMERCIAL PACKAGING WITH DIVERSE MANAGEMENT METHODS.				
CONSORTIUM	REUSE	PREPARATION FOR REUSE (REGENERATION)	RECYCLING	ASSIMILATION
RICREA		<ul style="list-style-type: none"> Drums and tanks: 34 ktonnes 	<ul style="list-style-type: none"> Non-regenerable hazardous drums: 12 ktonnes Non-hazardous non-reusable: 125 ktonnes Strapping: 29 ktonnes 	
COMIECO			<ul style="list-style-type: none"> Collection at business premises and other small and medium-sized businesses (UND) Network of 142 platforms 	Domestic-use cardboard boxes from households in combined SC and non-domestic-use selective SC
RILEGNO	Weight abatement on CAC for reusable packaging: 908 ktonnes benefited from CAC reduction	<ul style="list-style-type: none"> Recovered cistern bases: 9ktonnes per 31 plants Pallet retreatment project: 133 ktonnes of regenerated pallets from 65 consortia 	<ul style="list-style-type: none"> Network of 378 platforms: 797 ktonnes 	
COREPLA		<ul style="list-style-type: none"> Drums and tanks (PIFU): 24.5 ktonnes per 32 plants 	<ul style="list-style-type: none"> PEPS – expanded polystyrene packaging recycling platform: 10.3 ktonnes per 28 plants Network of 53 platforms jointly with plants CARPI consortium member plants: 180.6 ktonnes 	Film: 142.7 ktonnes

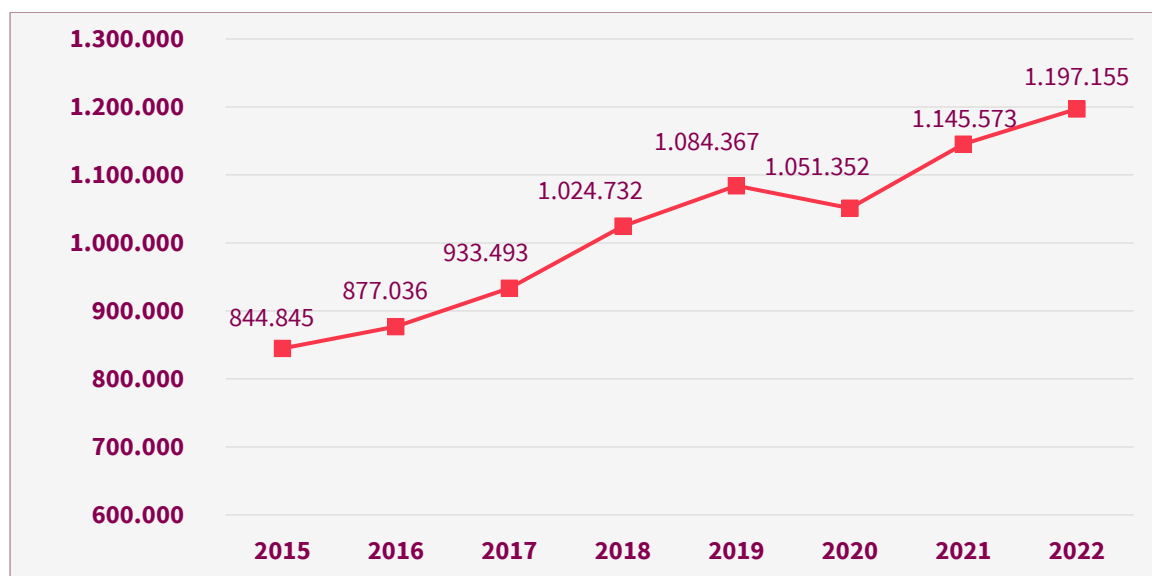
a) Reuse for commercial and industrial packaging

The Article 183, paragraph 1, letter r) defines reuse as “any operation through which products or components that are not waste are used again for the same purpose for which they were conceived;” and Article 218, paragraph 1, letter e) of Legislative Decree 152/2006 defines reusable packaging as “packaging or packaging components that have been designed, engineered, and placed on the market to withstand multiple trips and rotations within a reuse circuit during their lifecycle for the same purpose for which they were conceived;”

Starting from this assumptions, it clearly emerges that primary packaging often cannot be reused due to its intended function. On the other hand, the matter of reuse in the Commercial and Industrial sector is vital and has been improving and developing in the last few years.

The data gathered and reported on reuse are calculated based on the information available in the CONAI database, the results from the mapping conducted by the Italian Packaging Institute on the "Analysis of Packaging Placed on the Market," and the information provided by all the PROs involved in these applications.

The following table⁴ presents the evolution of quantities in weight of reusable packaging in 2022 compared to the data from 2021, indicating a continued growth in the adoption of this type of packaging, particularly in terms of Value-Added Recovery (VAR). The data is based on current estimates provided by CONAI and will be further refined in the coming years to align with new calculation methodologies.



After a slightly decline in 2020, primarily due to the economic downturn affecting the B2B sector, the quantities of reusable packaging processed through CONAI's facilitated procedures showed a continued upward trend in 2022, following the growth observed in 2021. As seen in the table above, with the aim of achieving a more eco-sustainable management of packaging waste.




An important example of reusable packaging intended for C&I, which is the primary application area for reusable plastic packaging, two distinct business models coexist by COREPLA. The first model consists of formal loops: specialized companies managing pools of packaging, handling the recovery of used items, reconditioning them, potentially decontaminating them, and reintroducing them into the circulation for reuse or recycling if they are no longer usable. Alongside these structured circuits, there are companies that purchase used packaging from end-users, refurbish it, and

⁴ <https://www.conai.org/download/programma-generale-di-prevenzione-e-gestione-degli-imballaggi-e-dei-rifiuti-di-imballaggio-2023/?tmstv=1717408864>

resell it. Unlike the formal circuits, these informal reuse systems are challenging to quantify due to the varying types of companies involved, ranging from small local enterprises to multinational corporations which is estimated approximately around 107 ktons in 2022.

b) Preparation for Reuse (Regeneration) for Commercial and industrial packaging

The CONAI system is also promoting the development of preparation for reuse of packaging through innovative cleaning and regeneration processes. Thanks to the platforms made available by CONAI for delivering C&I packaging waste, they help to ensure to meet stringent quality standards and enabling the packaging regenerated for their reintroduction into the market. This not only reduces the demand for new packaging materials but also mitigates the need for virgin raw material, fostering a more sustainable and resource-efficient approach to industrial packaging management.

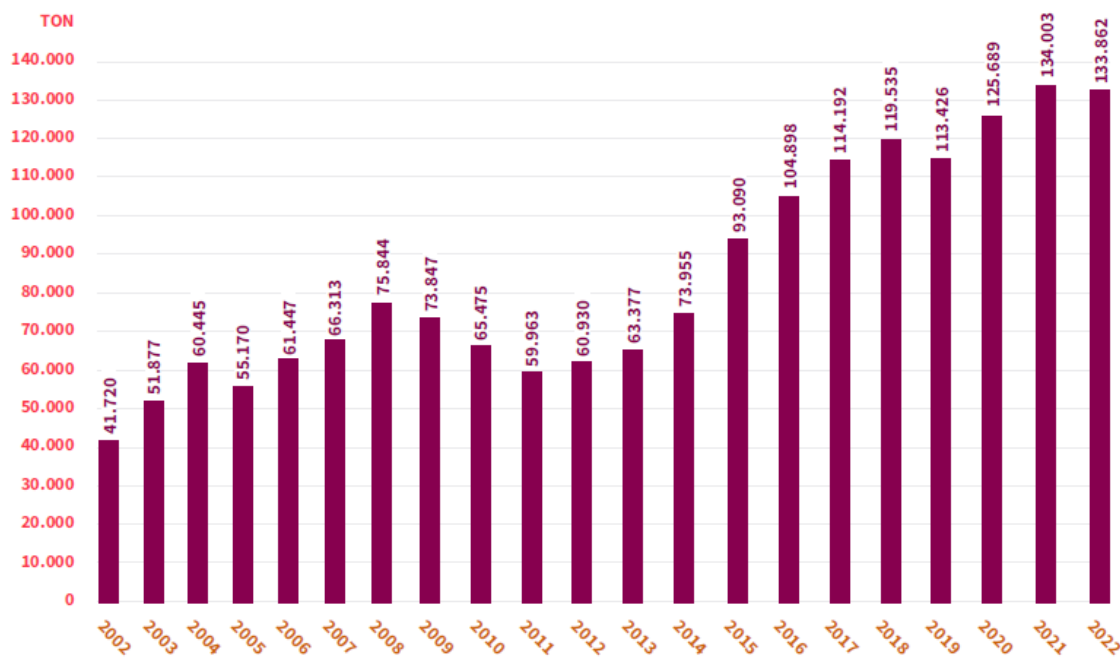
	2019	2020	2021	2022	
	TON	TON	TON	TON	
STEEL PACKAGING					
JERRYCANS/CANISTERS	22.693	22.758	26.416	25.481	 Jerry cans
DRUMS	8.819	7.920	8.932	8.729	 Drums
	31.512	30.678	35.348	34.210	 Multi-material canisters

For example, RICREA invests significant resources in refurbishing and regenerating used steel packaging. Steel drums and IBCs (Intermediate Bulk Containers) with steel cages, valued for their durability and strength, undergo various regeneration processes that allow them to be reused as safe and renewable packaging. In Italy, there are over 30 authorized facilities equipped to conduct these operations,

primarily located in northern Italy near areas with high industrial activity. The total quantity of regenerated packaging (including drums and IBCs) by these companies in 2022 exceeded 34,000 tonnes, representing a slight decrease compared to the previous year.

Based on the data provided in the preceding table, it becomes apparent that the quantities of regenerated tanks have exhibited a relatively consistent trend, stabilizing after the peak observed in 2021. Delving into specifics, the structural design of these tanks, particularly their steel framework, renders them highly amenable to repair and regeneration procedures. Consequently, subsequent applications often entail the utilization or, if regeneration isn't feasible, a replacement unit. The potential for regenerating these containers hinges significantly on two key factors. Firstly, it depends on the physical condition in which they are recovered. Instances of cuts, or oxidation may influence the feasibility and extent of the regeneration process. Secondly, the nature of the products previously housed within these tanks plays a pivotal role. Variations in the contents, such as paints, oils, or solvents, can impact the regeneration process, affecting considerations like cleaning procedures and the overall efficacy of regeneration efforts. Thus, the sustainability and longevity of these containers are intrinsically linked to their capacity for effective regeneration, which, in turn, is contingent upon addressing both structural and contaminant-related challenges inherent in their reuse lifecycle.

Referring instead to wooden pallets, there is a notable project launched by RILEGNO in 2002 called "**Reprocessing of Wooden Packaging**." This project involves providing a subsidy for the collection of pallet waste from participating companies, which are then repaired and reintroduced into circulation for reuse. Within the scope of the project, taking into account the time period between 2002 and 2022, it can be observed a constant increase in the ton dedicated to this stream. In the years, there was an 8% reduction in the amount of waste pallets collected in 2022 compared to 2021. Consequently, the quantity of regenerated pallets from 2021 decreased by 0.11%, totalling **133,862 tonnes**.



Another example are the so called **PIFU facilities** which have a contract with **COREPLA** and whose agree to receive and take back, refurbish, and/or recycle **plastic drums and IBCs** (Intermediate Bulk Containers), aiming to provide greater stability to the system and support prevention activities. The work of these platforms involves refurbishing and cleaning packaging that is in good condition to reintroduce it into the market. Additionally, the PIFU platforms actually recycle or send for recycling plastic drums and IBCs that cannot be refurbished and reintroduce into the market. The facilities offer free of charge take back of packaging waste consisting mainly of drums and/or IBCs from the companies, within the limits and conditions specified in a standard contract; any cleaning operations, however, remain the responsibility of the producer. Nationwide, these platforms represent a widespread network, which COREPLA is committed to expanding⁵ to improve the free of charge take back service coverage. The majority of these platforms are part of the **FIRI**⁶ association (Italian Federation of Packaging Reconditioners), of which exists also an agreement among **CONAI, RICREA, RILEGNO, COREPLA**, and it aims to support the regenerator sector, essential for sustainable packaging management. It fosters innovation, collaboration, and knowledge-sharing to enhance regenerator operations' efficiency and sustainability. By advocating for the sector's value and

⁵ https://www.corepla.it/sites/default/files/elenco_piattaforme_pifu_2023.pdf

⁶ <https://www.associazionefiri.it/>

benefits, it seeks to elevate its profile and drive positive change in packaging waste management. In this regard is important to highlight the role of the FIRI association, which brings together and represents the main companies operating in the field of collection and management of industrial & commercial packaging and packaging. FIRI member companies have many years of experience in the reconditioning and renovation of industrial packaging and are equipped with the necessary authorisations for the management of packaging waste, as well as adequate systems, in full compliance with regulations. The types of packaging collected and prepared for reuse by FIRI member companies are: multi-material tanks, plastic drums and steel drums, generally used in B2B industrial circuits. The FIRI members are operating throughout the country and represent almost all of the sector (over 90%) of industrial packaging regeneration.

c) Recycling for commercial and industrial packaging and packaging waste

Looking at the recycling and recyclable C&I packaging waste, Italy boasts over **560 platforms** at disposal to companies for delivering C&I packaging, strategically distributed across all regions, with approximately 50% located in the North, 18% in the Centre, and 32% in the South of Italy. These platforms are in place for the treatment of both secondary and tertiary packaging waste, with consortium systems covering the associated costs of sorting and valorisation activities.

REGION	NO. OF PLANTS	PAPER	WOOD	PLASTIC	STEEL	TOTAL PER MATERIAL
Abruzzo	15	2	12	2	0	16
Basilicata	5	1	3	2	0	6
Calabria	25	8	20	0	0	28
Campania	45	20	23	7	1	51
Molise	3	0	2	1	0	3
Apulia	26	7	16	6	0	29
Sardinia	10	3	6	1	0	10
Sicily	48	8	38	4	0	50
SOUTH	177	49	120	23	1	193
Lazio	47	7	41	2	1	51
Marche	20	2	19	0	0	21

Umbria	13	2	8	5	0	15
Tuscany	20	3	15	8	2	28
CENTRE	100	14	83	15	3	115
Emilia-Romagna	52	13	34	13	1	61
Friuli Venezia Giulia	9	2	6	2	0	10
Liguria	17	3	15	2	1	21
Lombardy	96	20	47	31	16	114
Piedmont	38	8	26	13	6	53
Trentino-Alto Adige	17	5	12	1	0	18
Valle D'Aosta	1	1	1	0	0	2
Veneto	53	11	34	14	3	62
NORTH	283	63	175	76	27	341
TOTAL	560	126	378	114	31	649

This network of platforms plays a pivotal role in the larger context of packaging waste management, serving as a key tool in the recovery and recycling process. Notably, while the focus keeps and remains on wood material, estimated to exceed **740,000 tons** in 2022, these plant also contribute to the recycling efforts of other materials, further strengthening Italy's commitment to sustainable waste. CONAI's members companies have the voluntary option to decide whether to deliver on their own the industrial packaging waste through the CONAI/Consortia network platforms free of charge or, alternatively, to use a waste management service at their own expense. This management flexibility is always available due to the payment of the EPR fee (CAC), which is consistently and invariably supported. This framework empowers companies to make informed choices regarding their waste management practices, fostering a culture of environmental responsibility and sustainability within the industry.

Self-compliant EPR schemes for industrial and commercial packaging and packaging waste in Italy

PARI system by ALIPLAST

The PARI System (Plan for Autonomous Management of Packaging Waste) is a system for the autonomous management of 'one's own' packaging waste, developed by Aliplast, a producer of PE-LD (film) packaging dealing with the autonomous management of secondary and tertiary packaging waste (including pallet covers, rolls for industrial packaging, tubular rolls, large industrial sacks, and polyethylene sheets for completing packaging), ensuring recovery and recycling of at least 60% of packaging placed on the market in the commercial and Industrial stream, fostering a circular economy approach. Aliplast leads a group of eight companies, operating in Italy and in Europe, as collectors, recyclers and producers of low environmental impact plastic packaging.



PARI packaging, during production, is marked with a special mark (size 74 x 42 mm, and position customisable according to customer requirements) that fulfils two different functions:

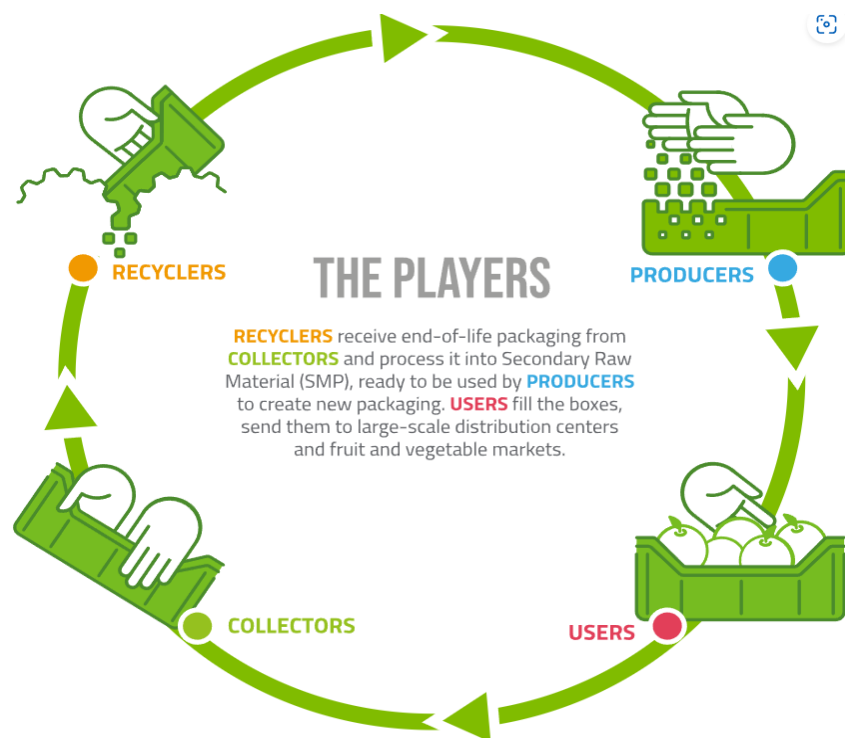
- Enable the end user, or whoever happens to hold the PARI-labelled waste, to get in touch with Aliplast to organise collection;

- Recognise, during collection and recycling, PARI-labelled waste from others, and quantify the amount.

According to the 2024 Specific Prevention and Management Plan for Packaging and Packaging Waste, Aliplast will contribute to the placing into the market of 15,30 kton of packaging and to the recycling of 13,7 kton of plastic packaging.⁷

CONIP consortium

CO.N.I.P. is the voluntary non-for-profit Consortium, founded in 1998, tasked with the organization of the management, collection, and recycling initiation of plastic crates and pallets at the national level. CO.N.I.P. is led by a Board of Directors consisting of a President, a Vice-President and 11 councillors, who are representatives of companies and express the will of Manufactures (packaging producers).



CO.N.I.P. has three main objectives. First, it organizes nationwide environmental management systems for secondary and tertiary plastic packaging waste generated by its members, both autonomously and collectively. Second, it informs plastic packaging users, particularly consumers, about their roles, available collection and recovery

⁷ [Piano Specifico di prevenzione e gestione degli imballaggi e dei rifiuti di imballaggio 2024](#), p.68-73.

systems, and the significance of labelling on plastic packaging, along with relevant elements of packaging waste management plans. Finally, it promotes domestic and international use and recycling of plastic packaging, disseminating knowledge about related issues and advantages for both direct customers and end-users through various informational and dissemination channels.

The CO.N.I.P. system has yielded great results for the environment, as in one year it has avoided the consumption of 628 litres of water and 2.3 GJ of energy, the emission of 155,000 tons of greenhouse gases and finally, the import of 790,000 barrels of oil.

According to the annual Specific Prevention and Management Plan for Packaging and Packaging Waste, CO.N.I.P. predicts that 72,30 kton of crates will be placed into the market in 2024, whereas 56,50 kton of plastic crates and pallets will be recycled.⁸

ERION packaging by ERION

Erion Packaging, recognized by the Italian Ministry of the Environment and Energy Security (MASE) in December 2022, is one of the 6 different Consortia under the ERION umbrella and is the national non-profit Consortium specialized in the management of packaging waste for Manufacturers (packaging producers) and importers of Electrical and Electronic Equipment (EEE) and Batteries made of paper, plastic, and wood.

The main deliberative body of the Compliance Scheme is represented by the Members' Assembly, which supervises the proper functioning of the organizational, administrative and operational structure. Erion Packaging is governed by a Board of Directors consisting of a Chairman and 7 directors, representatives of the associated companies and expression of the will of all manufactures (packaging producers).

The role of Erion Packaging along the entire value chain is aimed at combining the reduction of the environmental impacts generated by the products with the efficiency of a sustainable business model. Erion Packaging responds to the needs of Manufacturers (packaging producers) also through the development of industry innovation initiatives and projects while always maintaining, in the interest of its Members, a productive and constant relationship with all stakeholders in the chain. Erion Packaging not only ensures full regulatory compliance but is a valuable support

⁸ [Piano Specifico di prevenzione e gestione degli imballaggi e dei rifiuti di imballaggio 2024](#), p.68-73.

for everything related to Extended Producer Responsibility and the implementation of the circular economy in businesses.

Thanks to its strategic partnership with the services company Interzero Italy, a company specializing in environmental services and recycling, Erion Packaging is able to offer dedicated information and operating models capable of integrating data from all parties involved (Collection Centres, logistics operators and treatment plants), ensuring the full traceability of all packaging under the Producer Responsibility Organisation responsibility.

Moreover, Erion has a dedicated team constantly engaged in European research projects for the development of the circular economy. Being able to look to the future also means investing in technological and organizational innovation to identify solutions capable of enhancing system performance. Engaging with the various chain stakeholders, focusing attentions and resources towards wide-ranging strategic programs, represent for the Compliance Scheme a priority capable of generating added value.

In 2024, ERION entered the prestigious 'Most Climate-Conscious Companies' list, an Italian ranking of national companies that have reduced their CO2 emissions to turnover ratio the most. Erion managed to enter the list thanks to the reduction of the emissions associated with each of its activities and the full transparency in the reporting in the Erion Multi-Consortium System Sustainability Report.

According to the annual Specific Prevention and Management Plan for Packaging and Packaging Waste, ERION made the following predictions on the quantities of packaging for EEE of different materials that will be placed into the market in 2024: 24,90 kton of paper packaging, 8,80 kton of wood packaging and 6,90 kton of plastic packaging. Moreover, 16,10 kton of paper packaging, 6,80 kton of wood packaging and 2,73 kton of kton will be recycled according to the predictions⁹.

⁹ [Piano Specifico di prevenzione e gestione degli imballaggi e dei rifiuti di imballaggio 2024](#), p.68-73.

Results and performances of the EPR scheme for C&I

Recycling rate for monitoring EU targets

In this regard, the total recycling rate for packaging, encompassing both B2C and B2B channels, has reached an impressive **71.5%**. This translates to approximately **10.4 million tons** of recycled packaging out of a total of **14.5 million tons** placed on the market. This achievement underscores CONAI's commitment to sustainability and effective waste management practices.

In the table below, the detailed breakdown of the recycling rates by material for all the streams and the position of CONAI respect to EU target 2025 and 2030 established by Directive (EU) 2018/852 of the European Parliament and of the Council of 30 May 2018, which amends Directive 94/62/EC on packaging and packaging waste.

FINAL 2022	PLACED ON THE MARKET	EFFECTIVE RECYCLING		EU TARGET 2025	EU TARGET 2030
MATERIAL	Kton	Kton	%	%	%
Steel	519	418	80.6	70	80
Aluminium	81.8	60	73.6	50	60
Paper	5,309	4,311	81.2	75	85
Wood	3,422	2,147	62.7	25	30
Plastic and Bioplastic	2,308	1,122	48.6	50	55

Glass	2,838	2,293	80.8	70	75
TOTAL	14,478	10,351	71.5	65	70

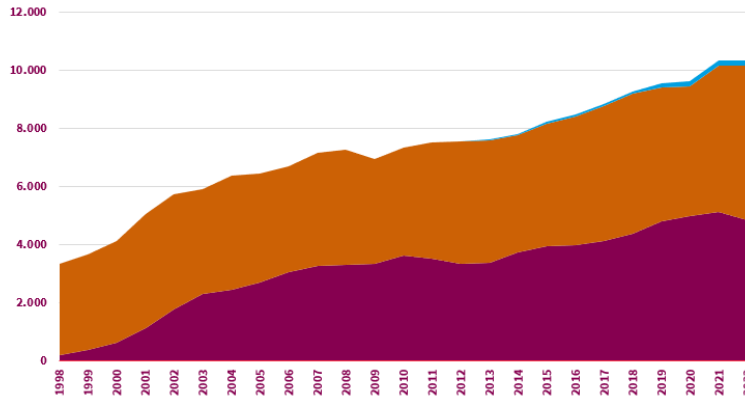
These targets sets by the EU aim to improve the management of packaging waste across all the European Union, promoting a circular economy and reducing environmental impact. Taking into account the results already reached by CONAI & Consortia, we can state that the Italian EPR scheme, thanks to his efficacy and efficiency, has already reached and overcome the recycling targets by weight for all packaging by 2030 and is in a good track in reaching also the material targets many years before the deadline.

At the same time, it's fundamental to understand also how CONAI achieves those results with respect to all the actors of the packaging and packaging waste supply chain. At the operational level, the CONAI & Consortia system performances act in a subsidiary role to the market, both for HH and C&I packaging waste. In recent years, the role of Consortia in recycling, compared to that of independent operators and the market, has become much more evident. During the health crisis, Consortia managed a larger amount of recyclable materials, in a context of difficulty in ensuring effective recycling and rising costs. With the economic recovery and the increase in prices of virgin and recycled raw materials, the market gained more space, leading Municipalities and Managers to take advantage of the positive trend in the recycling market and exit agreements with the Consortia, as provided by the ANCI-CONAI Framework Agreement. However, growing tensions and concerns, along with the sudden change in recycled raw material prices, are leading to an increase in the amount of packaging waste being returned to agreements for recycling, bringing back the direct contribution of the Consortia, without compromising the recycling results, which continue to improve.

**CONTRIBUTION TO NATIONAL RECYCLING
BY PACKAGING MATERIAL CONSORTIA
AND SELF-COMPLIANCE EPR SCHEMES AND MARKET**

The CONAI EPR Organisation acts to **SUPPORT THE MARKET** where the profit margin is lacking and guarantees free market competition in secondary raw materials (SRM).

MANAGEMENT OF PACKAGING WASTE SENT FOR RECYCLING



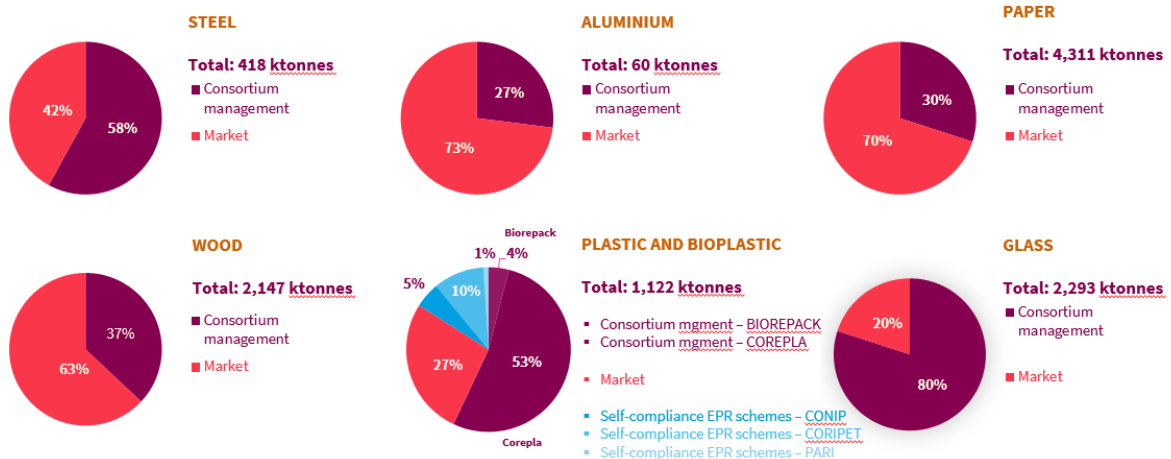
Drop in recycling managed by the CONAI EPR Organisation for wood, plastic and glass materials due to positive market trends.

- 2% SELF-COMPLIANCE EPR SCHEMES (CONIP-CORIPET-PARI)**
- 51% INDEPENDENT OPERATORS**
+3 % points over 2021
- 47% PACKAGING MATERIAL CONSORTIA**
-3 % points over 2021

In respect to the quantities managed by CONAI and the market, the charts below shows the contribution that each material Consortia gave in relation to the market one for all the packaging waste.

PACKAGING MATERIAL CONSORTIA CONTRIBUTION BY MATERIAL

From **27%** for **ALUMINIUM** packaging to **80%** for **GLASS** packaging.



The above numbers refers to the total recycling of packaging waste both HH and C&I. The latter one accounts for around the **45% of the total**.

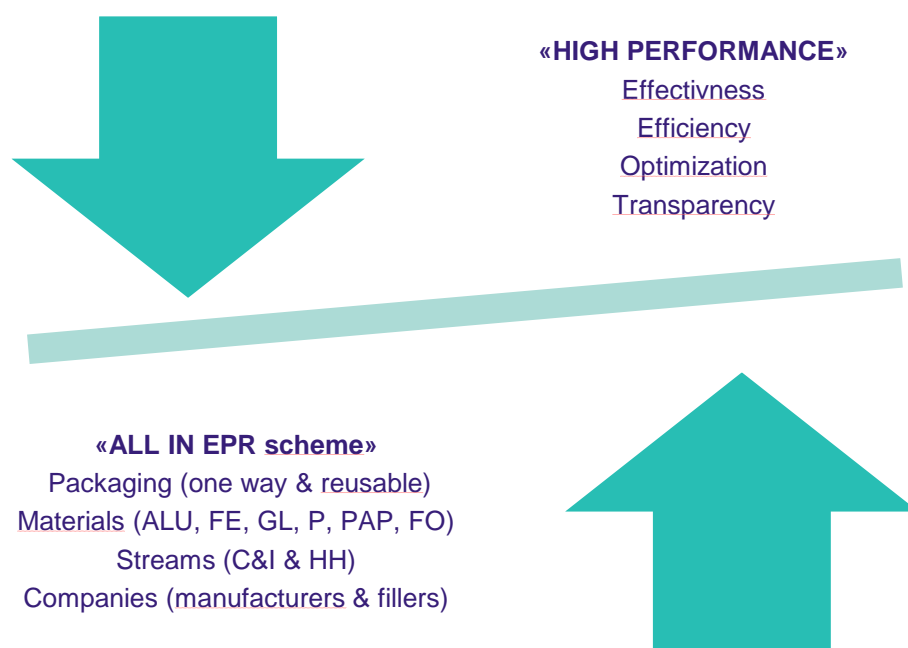
In relation to each material quota, in the table below are expressed the total recycling for each material streams coming from the C&I channel:

Material	C&I quota for recycling per material out of the total (%)
Steel	50
Wood	88
Paper	50
Plastic	34

The CONAI performances on recycling, according to the 2022 data, highlights the outstanding work that CONAI has accomplished over the past few years. This success is evident not only in their enhanced capacity for managing packaging and packaging waste throughout its subsidiary role and the strict collaboration with the local authorities.

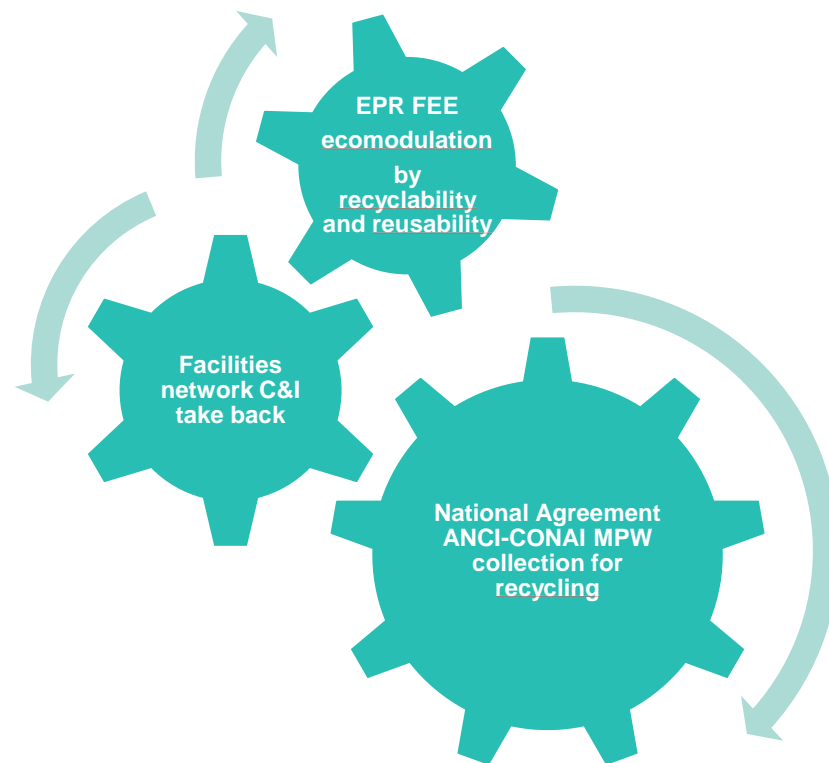
Considerations and final remarks

The optimal model for managing commercial & industrial packaging waste in Italy is based on an "all in" approach in which, together with the expertise on household waste, has been implemented since 1997.



This integrated system of the Italian EPR scheme for C&I had significantly benefit from the existing infrastructure and expertise of PROs, industry operators, waste management companies and all the other involved actors. This single approach, which includes all the material streams (C&I and HH), packaging manufactures and fillers, and all the type of packaging (one-way and reusable), will necessarily lead to substantial advantages, encompassing a wide range of benefits. Its **effectiveness** in terms of collection and recycling ensures that materials are gathered and processed into circular economy loops, meanwhile achieving the recycling targets. The **cost efficiency** of the system means that financial resources are used to optimize the burden costs and cover the necessary expenses. The **optimization of resources** and know-how leverages the existing infrastructure and expertise, ensuring that the best practices are applied and continuously improved upon. **Transparency**, one of the foundational principles of the Italian EPR scheme, ensures that all stakeholders have a

clear view of processes and outcomes, fostering traceability and accountability, (dandoci e attribuendoci alto livello di credibilità). This aspect not only enhances regulatory compliance but also builds public confidence in the system.



The Italian approach is fundamentally based on **three main concepts**, each contributing to its overall effectiveness, efficiency and sustainability.

First, the **eco-modulation** of the environmental contribution ensures that fees are adjusted based on the environmental impact (recyclability, reusability, based on net cost for managing it) of packaging materials. This principle incentivizes manufacturers to design more sustainable packaging by imposing higher contributions on materials that have a greater environmental footprint and it encourages the adoption of eco-friendly practices across the supply chain.

Secondly, the system relies on the presence and operation of a **network of platforms** dedicated to the free take back of used commercial and industrial packaging. These platforms streamline the process of gathering packaging waste from businesses, ensuring that it is efficiently and effectively prepared for reuse or recycled. By providing a free of charge option for companies to dispose of their packaging waste, the system is designed as a market subsidiary model to grant collection and recycling target.

Third, the **ANCI¹⁰ – CONAI framework agreement** which is crucial for the recycling of B2C packaging and that establish the burdens within commercial and industrial packaging waste management. Under this agreement, local authorities through waste management operators, collect domestic packaging waste separately adopting different collection models.

This trilateral approach has resulted also in a comprehensive, transparent, and complete reporting of data on packaging placed on the market, separated collected delivered to the EPR scheme, in compliance with EU methodology rules. These data have been verified and certified by third-party organizations, including Eurostat, and the incidence of "free riders," those who do not participate to the scheme, has consistently remained below **2%**, representing a significant success for the entire CONAI system. The outcomes not only show high recycling rates, cost efficiency and effectiveness for all packaging and packaging waste involved, but also substantial CO₂ emissions savings from reduced disposal costs of treated waste. Each country

has its own specificities, requiring tailored solutions to meet the unique needs of industries, particularly in the commercial and industrial channels. In



this regard, the CONAI system has largely contributed to avoid CO₂eq production from recycling¹¹, which is the difference between the saved production of greenhouse gases due to the avoided production of primary material and the greenhouse gas emissions from preparation operations for packaging recycling.

The Italian EPR scheme is one of the few existing models in Europe that it's also dedicated to C&I it's considered as a success and reference case across the EU.

¹⁰ ANCI (the National Association of Italian Municipalities): <https://www.anci.it/>

¹¹ <https://www.conai.org/download/conai-sustainability-report-2023-english-version/>



About Conai

CONAI, the National Packaging Consortium, is a private non-profit consortium. It is a system forming the response from private companies to a problem of collective interest, i.e. the environment, in accordance with the guidelines and objectives set by the political system. Around 700,000 companies which produce or use packaging have joined the Consortium System and CONAI oversees the activities and guarantees the recovery results of 7 Consortia: steel (Ricrea), aluminium (Cial), paper/cardboard (Comieco), wood (Rilegno), plastic (Corepla), bioplastic (Biorepack) and glass (Coreve), ensuring the necessary link between these Consortiums and Public Administration.

