

INTERPRETATION  
GUIDE

PACKAGING  
WASTE  
MANAGEMENT IN  
ITALY

CONAI'S  
CONTRIBUTION  
TO THE CIRCULAR  
ECONOMY

THE ROLE OF  
CONAI

MANAGEMENT  
PERFORMANCE OF  
THE CONSORTIUM  
SYSTEM

ENVIRONMENTAL  
BENEFITS OF THE  
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SYSTEM

CONAI'S  
COMMITMENT TO  
PREVENTION

ANNEX



# CONAI

# GREEN ECONOMY REPORT

— 2019 —



## → Letter from the President

Signing this CONAI Green Economy Report, the first of my term as President of the Consortium, makes me happy and proud. For over twenty years, the consortium system has ensured that steel, aluminium, paper, wood, plastic and glass packaging put on the market in Italy is sent for recycling. And this Report illustrates in detail the progress that the country system has made, from the birth of CONAI to date, in the field of circular economy and end-of-life management of packaging waste.

It is thanks to the collaboration of all the players in the chain that we have been able to save large quantities of natural resources and energy, and to generate new materials which are then used in new production cycles. Thus avoiding the extraction of virgin material. A systemic collaboration and vision that have proved to be essential, even - or perhaps especially - in a difficult year like 2020, shaken by the COVID-19 pandemic: the risks of a waste emergency were serious and concrete, and only thanks to a systemic management that coordinated common efforts was it possible to avoid a veritable environmental crisis linked to the interruption of the separate waste collection service.

2019 was a positive year: our country recycled 70% of the packaging materials put on the market, far exceeding the current minimum recycling targets (55%). If we add recovery to recycling, i.e. the use of packaging materials as an energy source, the total amount of packaging waste recovered exceeds 80%. Results that make us second in Europe, immediately after Germany, for per capita packaging recycling. Our country is an example to be imitated, its system sets the standard.

The Green Economy Report, which we present every year, gives these numbers an even broader horizon, quantifying the social and environmental benefits. We can accurately report them thanks to our Life Cycle Costing tool, a scientific tool developed precisely to calculate the direct and indirect effects of the work of the CONAI system, year after year.

Also worthy of mention are the effects of the eco-design interventions, promoted by companies and narrated by CONAI as examples of good practices, and how they reduce environmental impacts.

For the first time, our Green Economy Report also complies with GRI criteria and includes references to the Sustainable Development Goals (SDGs): a sign of CONAI's willingness to provide data and information in an increasingly robust and structured manner. Also to demonstrate, despite such difficult times, the proximity of the Consortium to the companies that belong to it and to its stakeholders, and the transparency of its intentions and action.

**CONAI President**  
**Luca Ruini**



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A close-up photograph of a hand placing a wooden block on top of a stack of other wooden blocks. The blocks are arranged in a stepped pattern, with some being light-colored wood and others being dark-colored wood. The background is a plain, light-colored wall.

# INTERPRETATION GUIDE

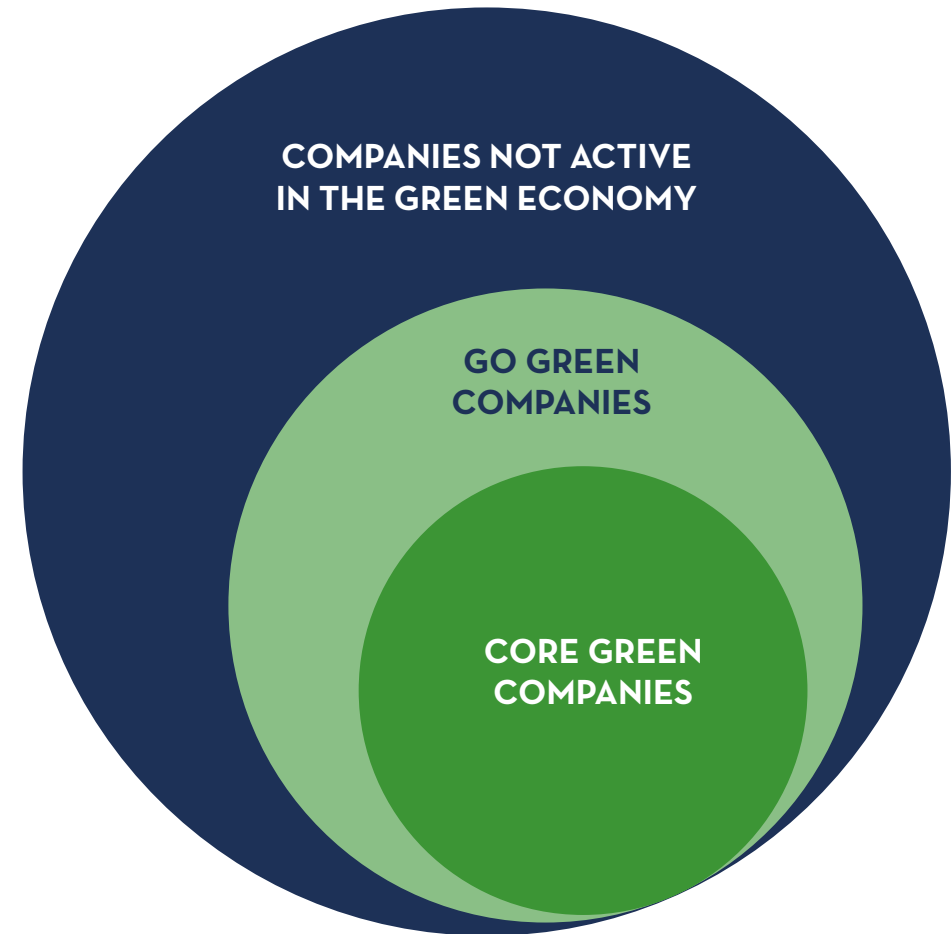




Since 2014, CONAI has been committed to clear and transparent reporting of the environmental and socio-economic performance generated by the packaging waste management Consortium System, through the innovative Green Economy Report (GER) tool, which is approved annually by the President and Director of the Consortium. The GER reporting method was designed by the Foundation for Sustainable Development to meet the reporting and communication needs typical of those companies that actively contribute to the green transition: “Core Green” companies that produce goods or services whose main function is to induce a direct environmental improvement (such as CONAI) and “Go Green” companies which, while not producing environmental goods or services, have decisively oriented production processes and products towards high environmental standards.

With this new edition of the report, CONAI has embarked on a journey to align the content of the GER with the 2016 “GRI Sustainability Reporting Standards” guidelines for sustainability reporting. The objective of this process is to achieve structural integration between the principles and needs underlying the two reporting models, on the one hand reporting in compliance with the principles and processes provided by the GRI and, on the other, meeting the needs of green economy companies, for which the scope of performance reporting cannot ignore the effects - positive and negative - generated by the goods and services offered during their entire life cycle, on society, the economy, the environment and more generally on the country system.

The 2019 edition of the CONAI GER was implemented in accordance with the above-mentioned option of the GRI Standard. Given the high specificity of the issues identified through the materiality analysis, due to the particular role and sector in which the CONAI system operates, these are not always attributable to a disclosure of GRI Standards and have been treated in the report with appropriate indicators.



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PER LO SVILUPPO  
SOSTENIBILE

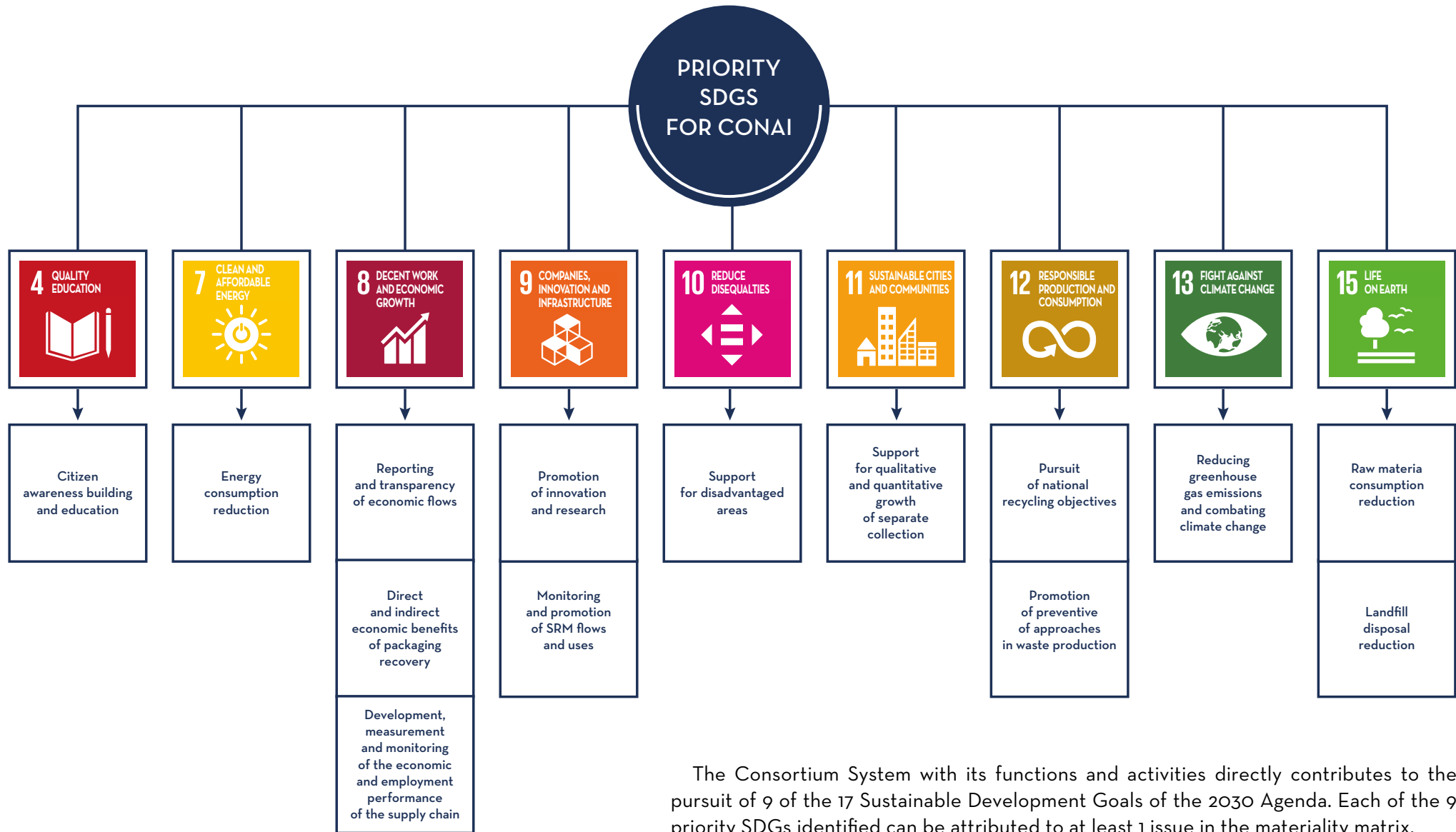
Sustainable Development Foundation

The materiality matrix is a graphical representation of the issues of greatest interest to CONAI and its stakeholders. The further up and to the right side of the matrix you move, the higher the level of interest (significance) associated with the issues. It is the result of the involvement of 147 representatives of all categories of stakeholders in the system in a survey designed to identify the issues of greatest interest to them, through the allocation of a score between 0 and 6. The coordinates for positioning in the matrix were defined by allocating each issue an average score on the basis of the opinions expressed by stakeholders, then subjected to a prioritisation whose influencing factor was: the frequency with which stakeholders voted for the 5 issues that were the most significant for them among the 15 issues analysed. The analysis led to the identification of 14 issues: 8 concern environmental aspects related to the management of packaging waste and 6 concern socio-economic aspects related to the activities carried out by the Consortium System. The scope of analysis is the entire Consortium System for the management of packaging waste in Italy. All the issues of the matrix are dealt with in this report, with the exception of "Monitoring and promotion of the flows and uses of secondary raw materials" and "Recovery, measurement and monitoring of the economic and employment performance of the supply chain", for which CONAI is committed to setting up a system to collect data and information (currently not available) necessary for future reporting.

→ **Materiality Matrix**



6	AVERAGE	HIGH
3	LOW	AVERAGE
0	3	6



The Consortium System with its functions and activities directly contributes to the pursuit of 9 of the 17 Sustainable Development Goals of the 2030 Agenda. Each of the 9 priority SDGs identified can be attributed to at least 1 issue in the materiality matrix.



# ITALY THAT RECYCLES

In 2019, **4 out of 5 packaging items** saved from the landfill



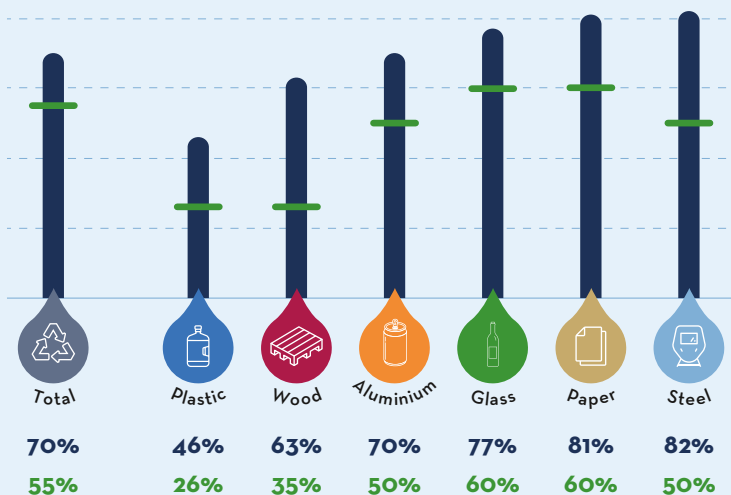
## MUNICIPAL COLLECTION DRIVES RECYCLING

**+6.2%** recycling from municipal collection compared to 2018



- 80.8%** of packaging waste generated is recovered
- 70%** is sent for recycling
- 50%** of that sent for recycling nationally is managed by the CONAI system

**11 M tonnes**  
Packaging waste recovered in 2019  
**+ 3.1%**  
vs 2018



## CONAI'S CONTRIBUTION



### STRENGTH LIES IN UNION

Through the ANCI-CONAI Framework Agreement, extended producer responsibility is implemented: whoever puts packaging on the market must also take responsibility for its correct end-of-life.

### CONAI GUARANTEES.

**92%**

### ITALIAN MUNICIPALITIES INVOLVED

in the collection system thanks to the Framework Agreement, for a total of **58 million inhabitants**

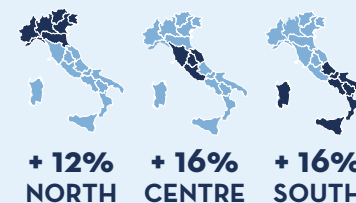
**+14.3%**

### INCREASING DISPOSALS

of packaging waste managed by CONAI and Consortia compared to 2018

### DISPOSALS TO CONAI COMPARED TO 2018

Plastic and glass lead the increase in collection in the Centre-South



### MORE THAN A BILLION EUROS FOR THE SUPPLY CHAIN

**653** M of €

to Municipalities to cover the higher costs of separate collection

**421** M of €

destined for processing, recycling and recovery activities







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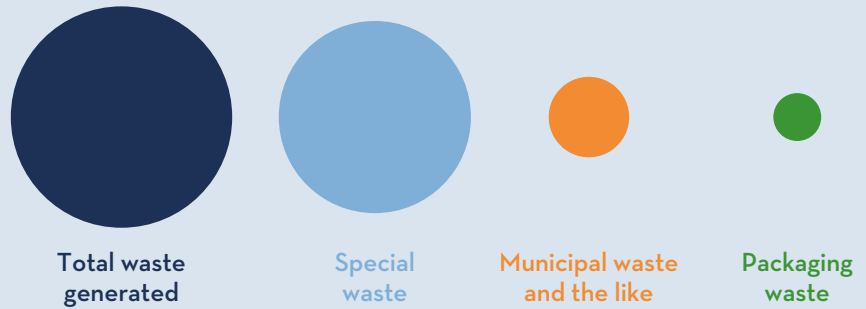
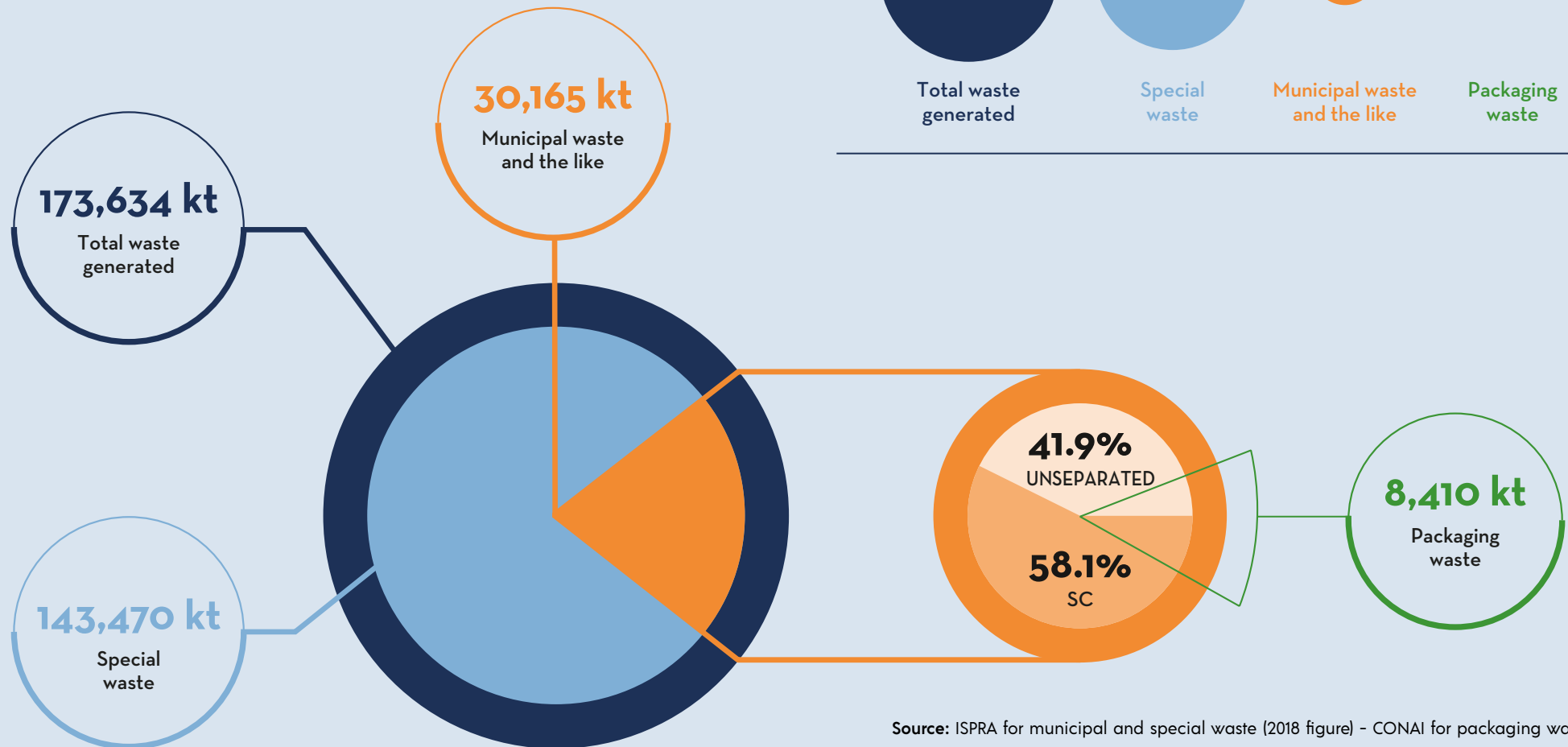
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## WASTE PRODUCTION AND MANAGEMENT IN ITALY

The amount of packaging put on the market in Italy in 2018 totalled 13.6 million tonnes, equal to 8% of all waste generated during the year. According to CONAI's estimates, 8.4 million tonnes of packaging waste goes into municipal solid waste, of which it accounts for about 28%.



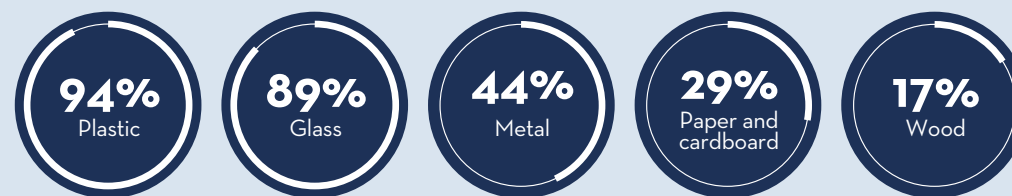
Source: ISPRA for municipal and special waste (2018 figure) - CONAI for packaging waste

## MUNICIPAL WASTE PRODUCTION AND MANAGEMENT IN ITALY

In line with the trend of previous years, the quantities of municipal waste collected separately continue to increase, both in absolute terms and as a % share of total municipal waste collected: from 17% in 2001 to over 58% in 2018, from 5 to over 17 million tonnes collected overall. Of the latter, approx. 46% consists of paper, glass, plastic, metal and wood waste, which also includes packaging waste.

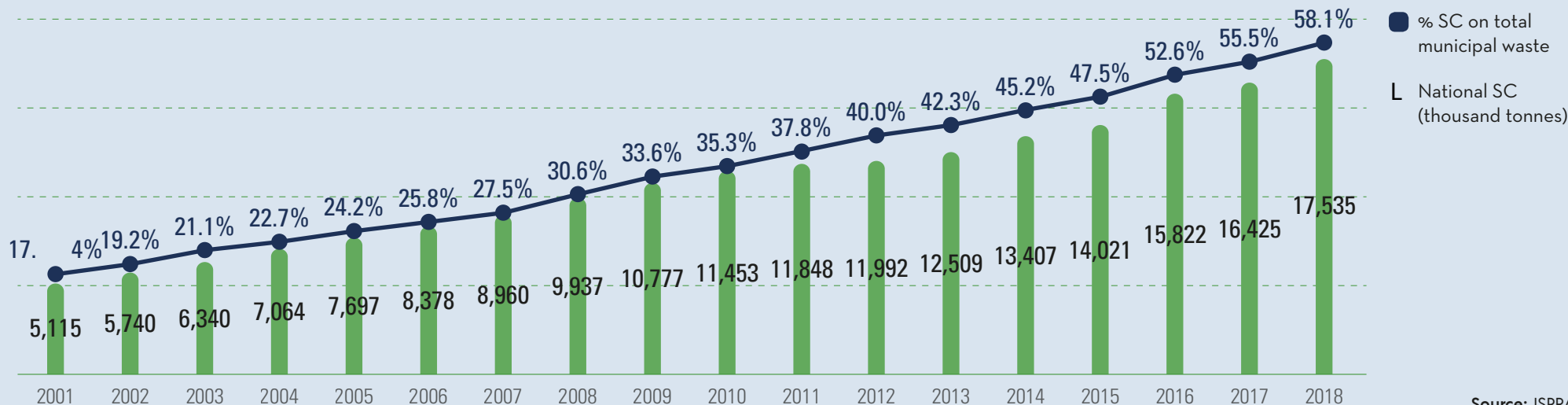
According to ISPRA, 54% of separate collection of paper and cardboard, glass, plastic, metal and wood consists of packaging waste. This share is extremely variable depending on the material considered (pie charts on the right) and ranges from 17% of wood to 94% of plastic.

### Share of packaging waste in municipal waste by material (average for the period 2013-2018)



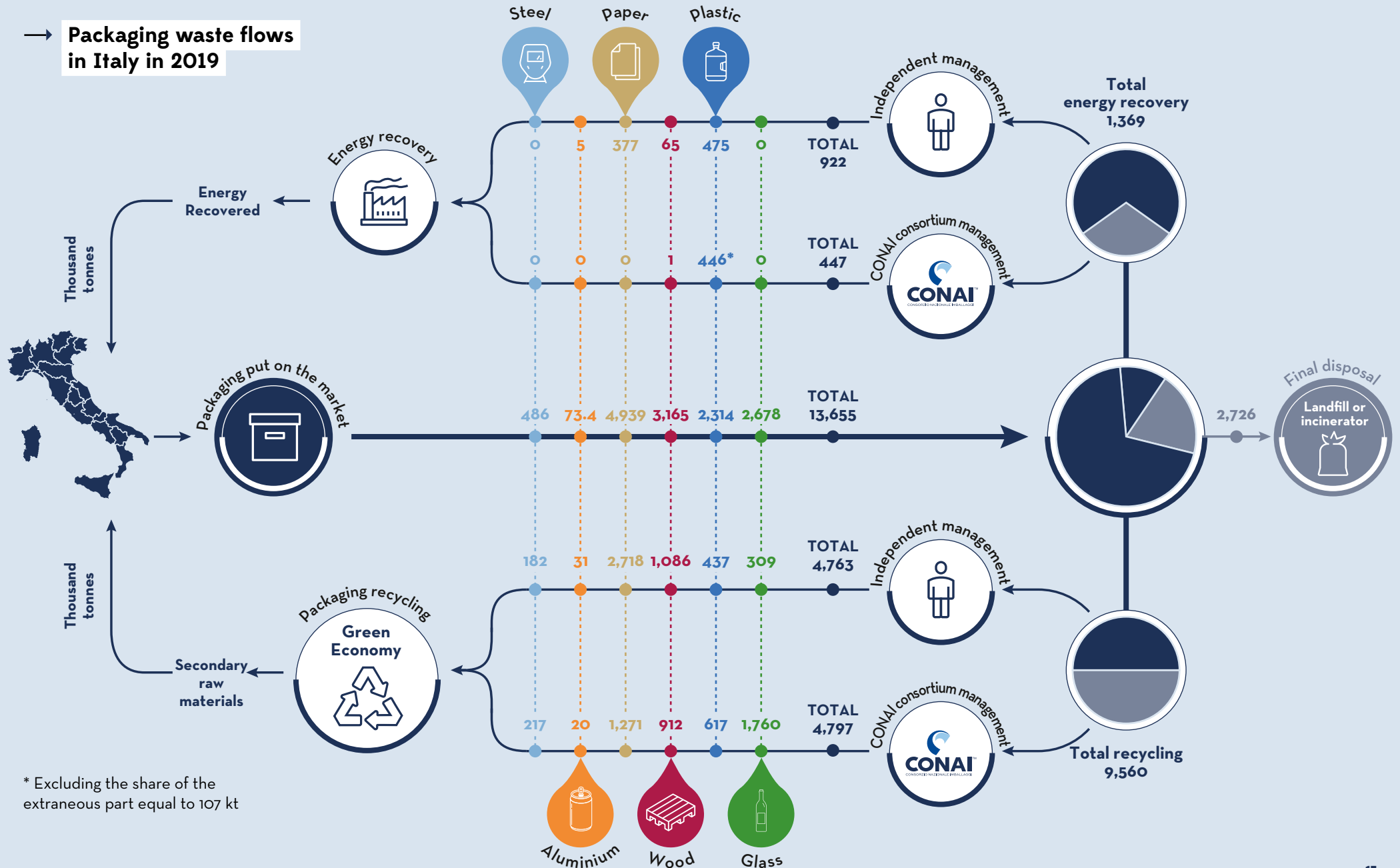
Source: ISPRA

### Separate collection of municipal waste from 2001 to 2018



Source: ISPRA

→ Packaging waste flows in Italy in 2019



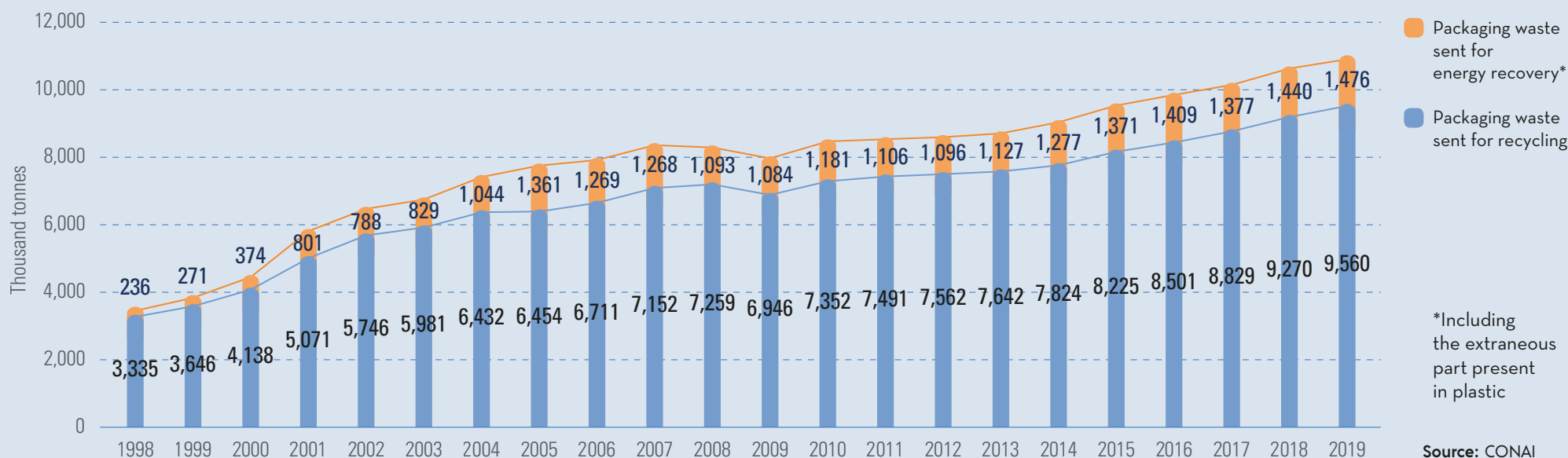


## RECYCLING AND ENERGY RECOVERY OF PACKAGING WASTE

In 2019, the total amount of packaging sent for recovery in Italy amounted to over 11 million tonnes, a figure which has been growing steadily over the years, with the exception of the two-year period 2008-2009 when, following the first effects of the economic crisis, there was a slight reduction related to the contraction in the amount of packaging put on the market. Recycling has always been the main destination of recovery activity: in 2019, 87% of packaging waste

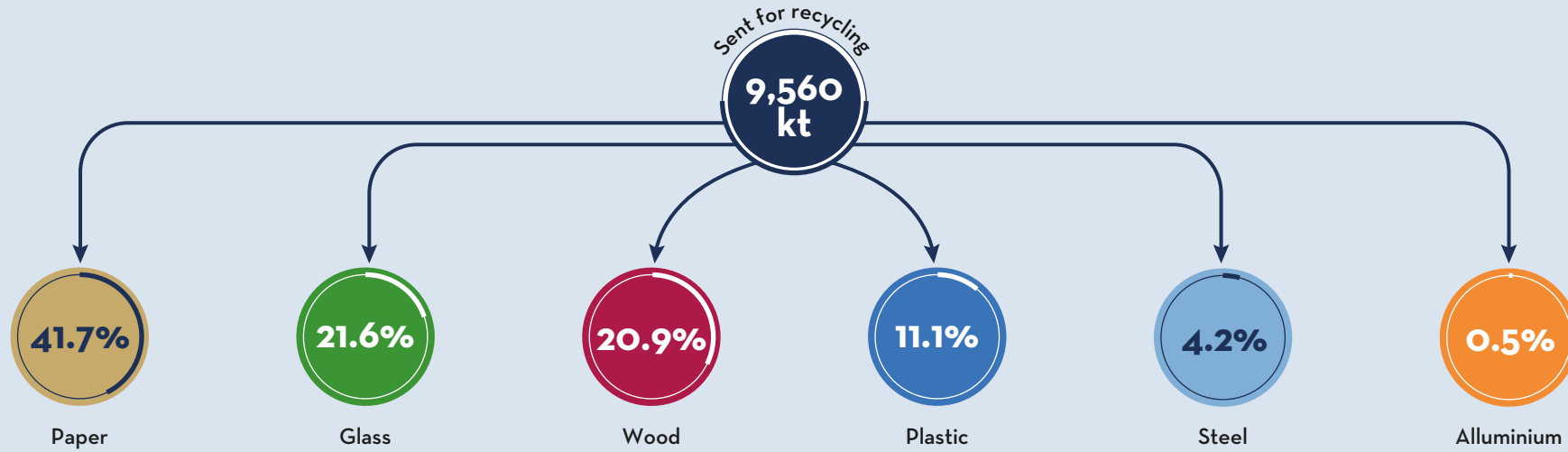
recovered (over 9.5 million tonnes) was sent for recycling, while the remaining 13% (1.5 million tonnes) was used for energy recovery. Paper and cardboard accounts for 41% of packaging waste sent for recycling in Italy, followed by glass and wood (both approx. 20%). For energy recovery, the incidence of plastic packaging is predominant, with more than 69% of the total quantities sent for energy recovery (mainly mixed plastics that are currently difficult to recycle).

### → Packaging waste sent for recycling and energy recovery in Italy from 1998 to 2019

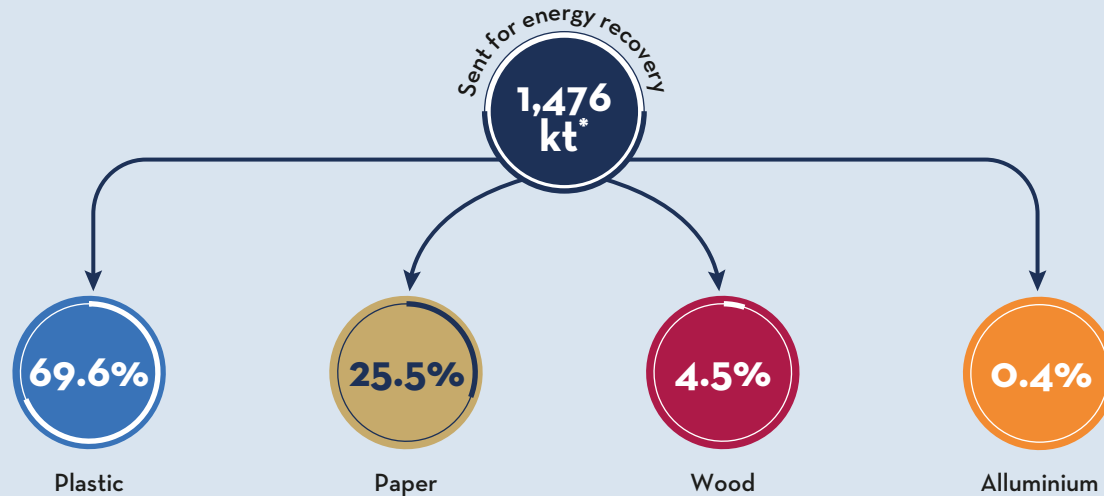




→ Breakdown of packaging waste sent for recycling and energy recovery by supply chain in Italy in 2019



\* including the extraneous part present in plastic



Source: CONAI



## CONSORTIUM, INDEPENDENT AND AUTONOMOUS PACKAGING WASTE MANAGEMENT

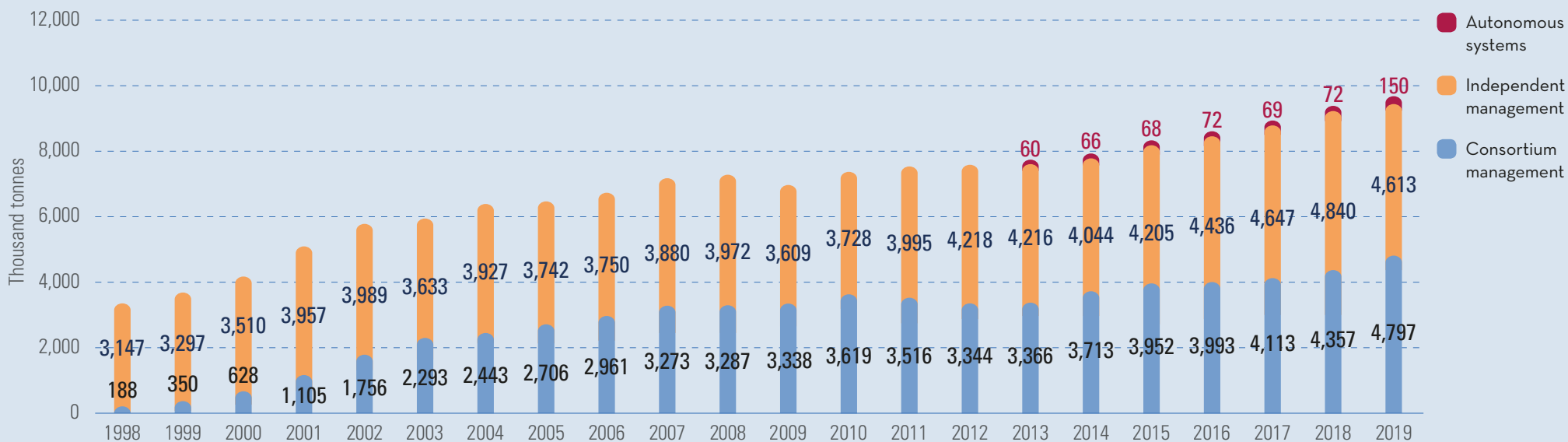
Prior to Legislative Decree 22/1997, separate collection was not widespread and most packaging sent for recycling came from commercial and industrial activities.

Thanks to the activities of CONAI and of the Consortia, since 1998 the share of municipal waste consisting of the packaging of the six materials has also found its way to recycling and, residually, to thermal energy recovery.

Over the years, both the quantities sent for recycling from independent management (private entities that, for profit, manage commercial and industrial packaging waste flows and part of the packaging waste present in municipal waste - when the Municipality/manager chooses not to adhere to the ANCI-CONAI Framework Agreement) and those of consortium management have grown.

It was the latter that determined the change of pace in the last two decades: of the additional 6.2 million packaging items sent for recycling between 1998 and 2019, approx. 74% consisted of quantities managed by the Consortium System deriving from municipal solid waste. Recycling not managed by the packaging supply chain Consortia concerns not only packaging waste sent for recovery by independent operators but also by the 3 recognised (or provisionally recognised) autonomous systems operating in the plastic packaging waste supply chain: the PARI and CONIP Consortia dealing with commercial and industrial packaging waste; the CORIPET Consortium (from 2019) dealing with PET bottles present in municipal waste.

### → Packaging waste sent for recycling by management from 1998 to 2019\*



\*The flows of autonomous management are accounted for separately from independent management starting from 2013

Source: CONAI

## CONSORTIUM, INDEPENDENT AND AUTONOMOUS PACKAGING WASTE MANAGEMENT

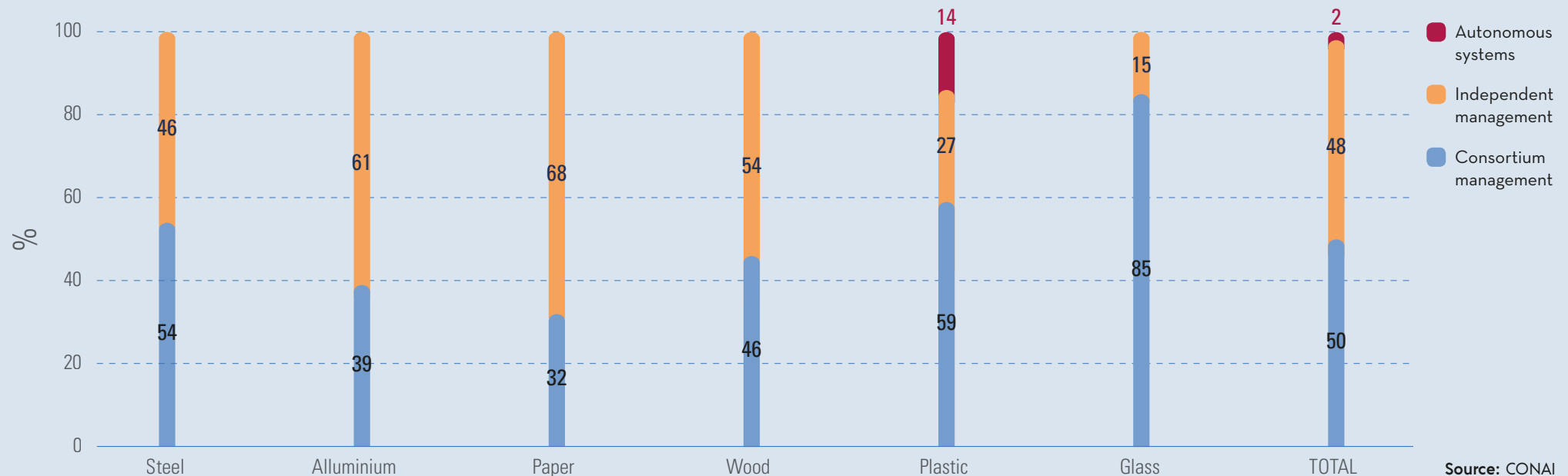
In 2019, consortium management was responsible for half of the total packaging waste sent for recycling in Italy. With reference to the individual packaging materials, CONAI and Consortium management represents the majority of the quantities sent for recycling at national level for glass, plastic and steel, while for wood, aluminium and paper, more than half of the recycling passes through independent management, responsible for 48% of packaging waste sent for recycling in 2019. It should in fact be remembered that consortium management, which intervenes when the market

alone does not guarantee environmental objectives, plays a subordinate role.

The remaining 2% of packaging waste, on the other hand, is managed by the independent systems active in the plastic packaging chain (CONIP - CORIPET - PARI).

**The Consortium System contributes to the recycling of 1 out of 2 packaging items.**

### → Share of packaging waste sent for recycling in Italy by the three management types in 2019

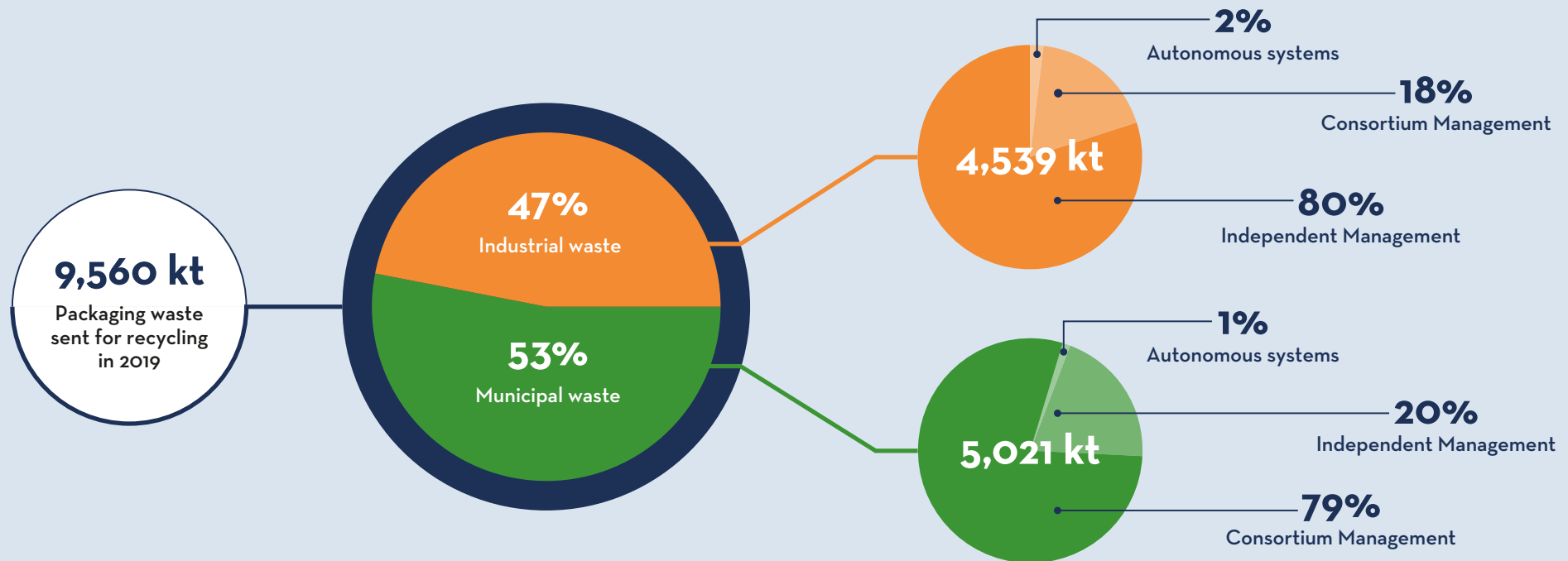


## NATIONAL RECYCLING FROM PUBLIC AND PRIVATE PREMISES

Of the more than 9.5 million tonnes of packaging waste sent for recycling in 2019, 53% came from municipal collections and the remaining 47% from private premises. The latter is packaging waste from the industrial sector. The lower collection and cleaning costs associated with this waste, given its more homogeneous quantitative and qualitative characteristics compared to the equivalent municipal waste, make its management, processing and sale as secondary raw materials more profitable.

For this reason, the CONAI-packaging supply chain Consortia system intervenes on industrial packaging waste by offering a second instance service,

only in the event of unfavourable market conditions that lead to packaging materials not being sent for recycling. COMIECO, COREPLA and RILEGNO, under specific agreements, have created a network of almost 600 platforms throughout the country, capable of receiving packaging waste from industrial, commercial, artisan and service companies free of charge. In 2019, these platforms enabled the collection and recycling of 835 kt of packaging waste from private premises, 18% of the total waste from Commerce and Industry sent for recycling nationally in the same year.



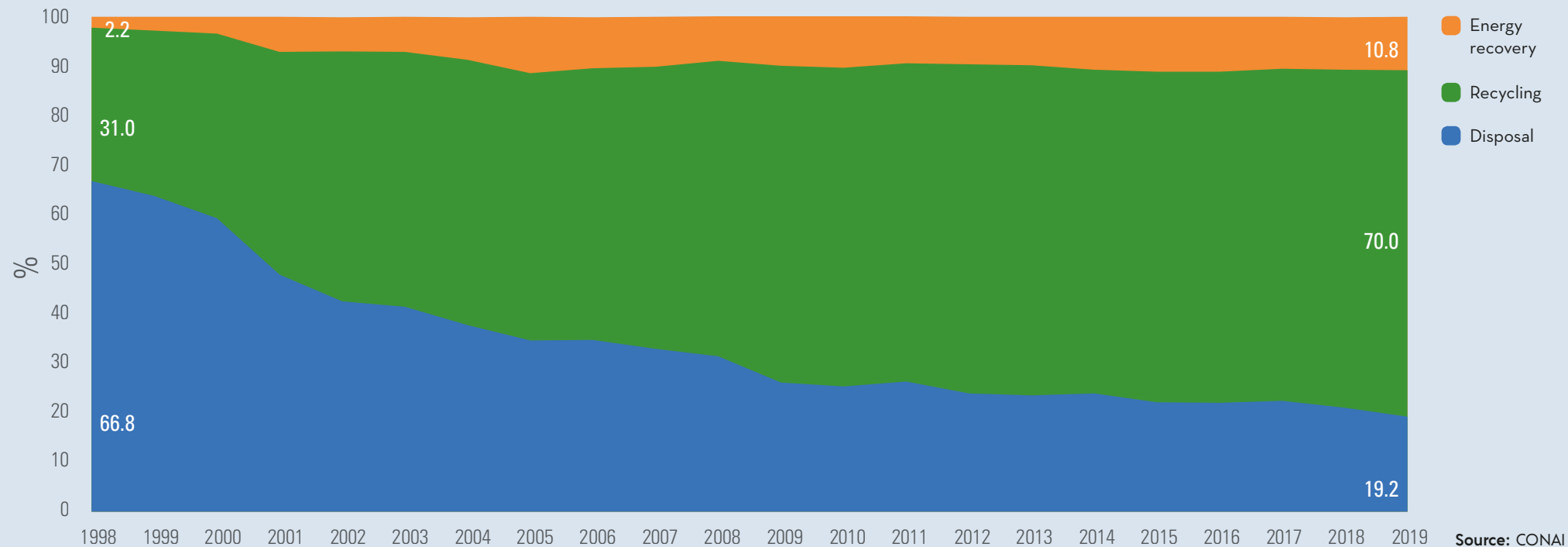
## RECOVERY VS DISPOSAL OF PACKAGING WASTE

The mission of the Consortium System is to promote the transition from a waste management model based on landfills to one based on recovery, consolidating the so-called “recycling society” based on the circular economy model.

After having exceeded the objective of recovering 60% of packaging waste put

on the market by 31 December 2008 (Legislative Decree 152/06) 3 years early, in 2019 the recovery and disposal rates compared to that put on the market are at their historical high (80.8%) and low (19.2%), respectively.

### → Percentage of packaging waste recovered in Italy from 1998 to 2019





## ITALY'S PERFORMANCE AND NEW RECYCLING TARGETS

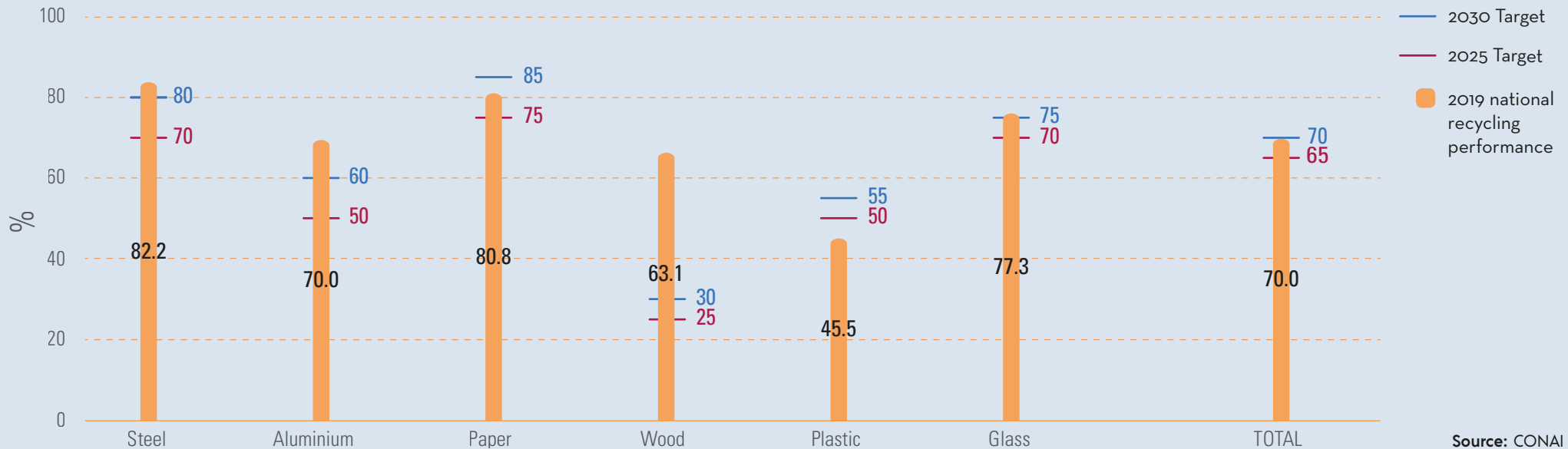
With a recycling rate of 70% in 2019, Italy is 11 years ahead of the packaging waste recycling target set for 2030 by the package of European directives on the circular economy.

The target of 65% for 2025 was already reached and exceeded in 2012. The recycling targets set for the individual supply chains for 2025 have also been exceeded, with the exception of plastics, which in 2019 had a rate of 45.5%, still below the 50% envisaged by the package for 2025, but with significant growth rates in terms of SC and recovery technology evolution of a relatively young

supply chain compared to the others. After aluminium, wood and glass, in 2019, also steel exceeded the 2030 recycling target, with a rate of 82%.

This analysis of recycling performance against the targets of the Circular Economy Package was carried out by applying the current methodology for calculating national recycling performance and not the new, more stringent recycling rate reporting methods required by the new Packaging Directive. The new methodology will be applied from next year.

### → Recycling rates of packaging waste by supply chain in 2019 in relation to the 2025 and 2030 European targets

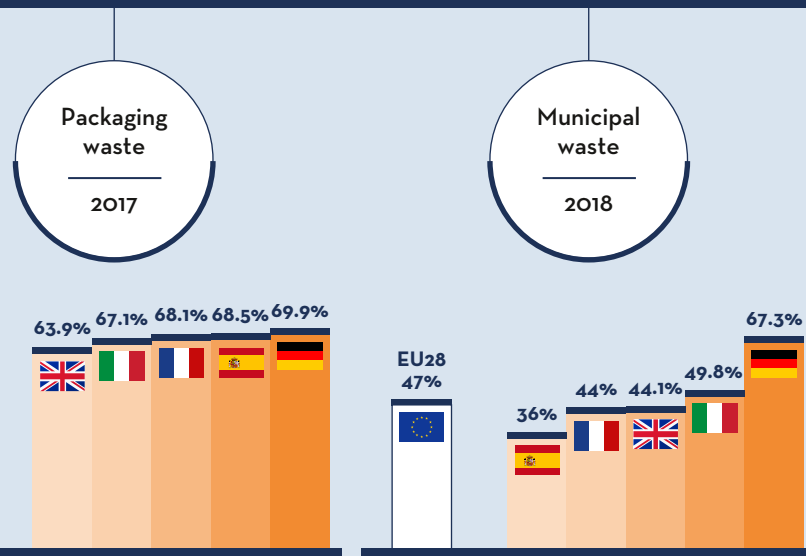


Source: CONAI

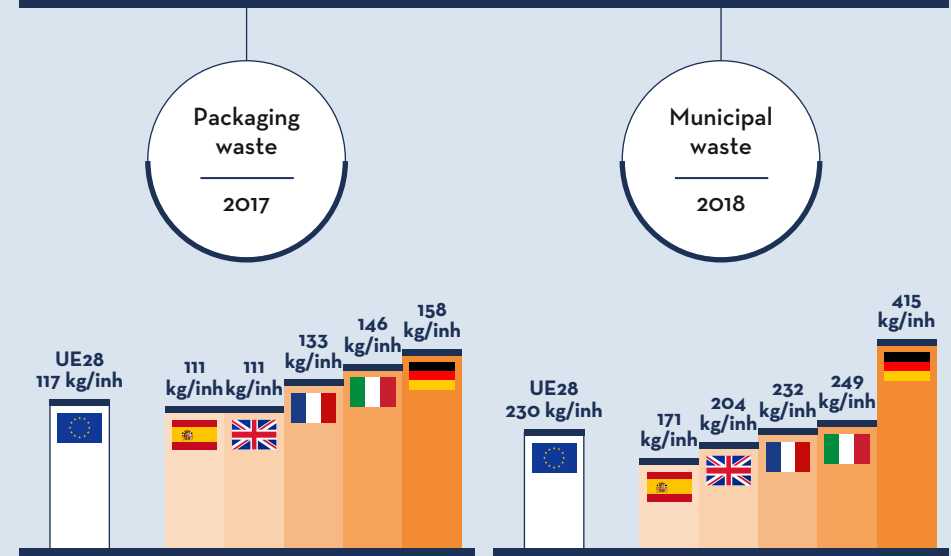
## ITALY'S RECYCLING PERFORMANCE COMPARED TO EUROPE

Packaging recycling has been the driving force behind the development of the national recycling sector, making Italy one of the best in Europe.

### RECYCLING RATES IN THE MAIN EU COUNTRIES



### RECYCLING\* PER CAPITA IN THE MAIN EU COUNTRIES

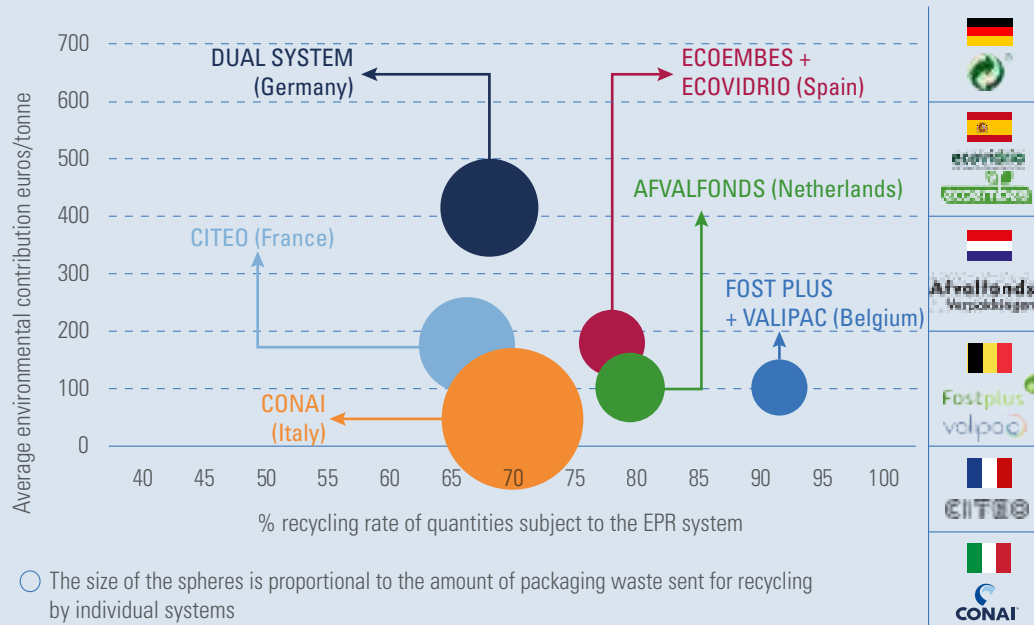


\*Recycling includes both material recycling and re-material + composting recycling.

Source: Eurostat

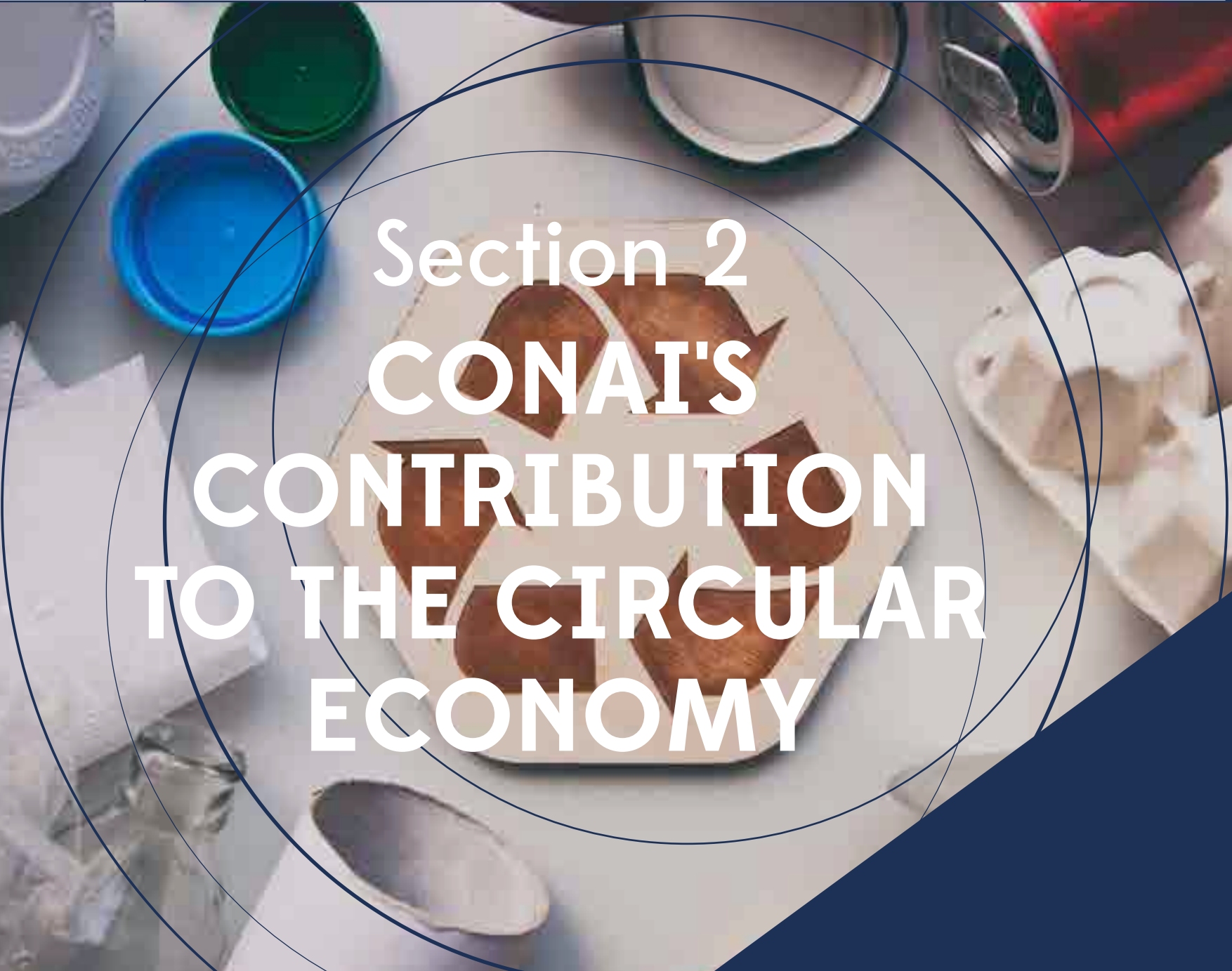
## COMPARISON BETWEEN THE ITALIAN SYSTEM AND EUROPEAN SYSTEMS

### → Average annual environmental contribution and recycling rates in the main extended packaging producer responsibility systems in Europe in 2018



The graph shows the economic and environmental performance of Extended Producer Responsibility (EPR) schemes in terms of average environmental contribution (y-axis) and recycling rates (x-axis). The lower the contribution required from companies, the better the economic performance for the same quantities sent for recycling. The more a system is moved down and to the right in the graph, the better its overall performance. From this preliminary analysis it can be seen that the **CONAI system enables good recycling results to be achieved while maintaining the lowest average environmental contribution among the systems studied.** The commitment remains to constantly monitor the performance of the main European players and to implement this analysis over time. For an informed interpretation of the results, it is necessary to take into account certain limitations of the analysis, in terms of comparability of the systems considered, including: the fact that the EPR systems of countries often have different perimeters (household vs commercial & industrial, existence of parallel deposit systems); environmental contributions have different levels of modulation (process in progress in certain countries and not yet in place, such as in Germany); the German system is based on a for-profit model, unlike the other non-profit ones; the German model has been estimated starting from DGP data, which represents 30% of the market, reset to 100%.

Source: CONAI estimate on EXPRA data, individual extended producer responsibility systems and German Central Agency

A large graphic featuring a central circular arrow icon on a light-colored surface, surrounded by various pieces of waste including plastic caps, a metal can, and a cardboard egg carton. The entire scene is overlaid with several concentric blue circles. The text 'Section 2 CONAI'S CONTRIBUTION TO THE CIRCULAR ECONOMY' is centered over this graphic in a large, white, sans-serif font.

# Section 2 CONAI'S CONTRIBUTION TO THE CIRCULAR ECONOMY

A large background image showing several hands of different skin tones joined together in a circle, symbolizing unity and teamwork. The image is overlaid with a semi-transparent blue circle and a dark blue triangle in the bottom right corner.

# The Role of CONAI





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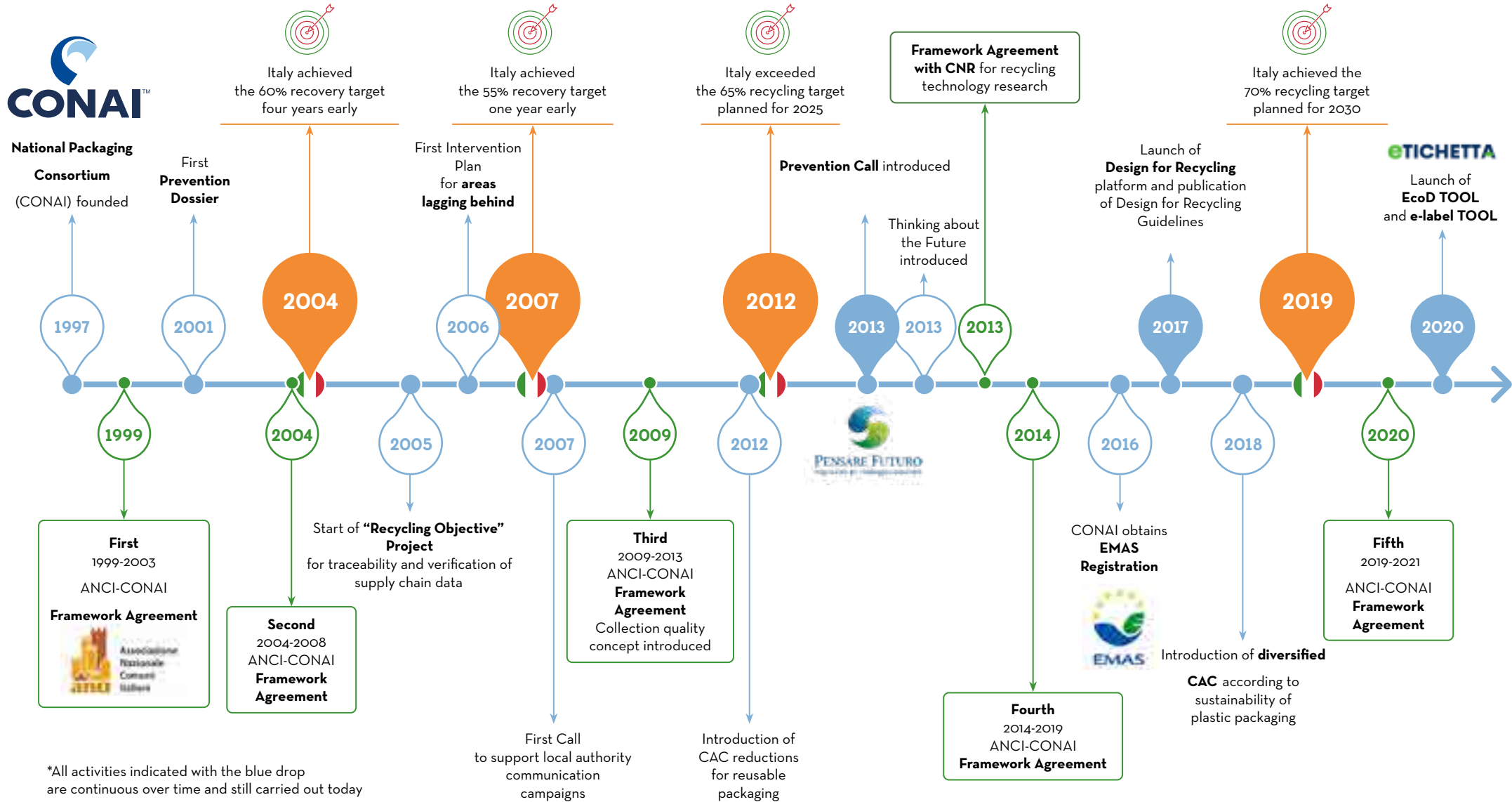
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## NATIONAL PACKAGING CONSORTIUM HISTORY



\*All activities indicated with the blue drop are continuous over time and still carried out today



## CONAI'S MISSION

Conai is a non-profit organisation created under the provisions of Legislative Decree 22/1997 with mandatory objectives and functions of an environmental nature, which can be summarised as follows:



Promote and coordinate the separate collection (SC) of packaging waste according to criteria of efficiency, effectiveness and economy.



Ensure the achievement of the recovery and recycling objectives for packaging waste provided for by law, supervising the cooperation between the Consortia and the other economic operators



Incentivate recycling and recovery of secondary raw materials by promoting the market for them



Reduce the delivery of packaging waste in landfills by promoting recovery alternatives



Organise information, training and awareness-raising campaigns aimed at packaging users and consumers in particular



Promote prevention of the environmental impact of packaging and packaging waste, through studies and research for the production of environmentally friendly, reusable and recyclable packaging



Enter into a framework programme agreement on a national basis with ANCI, the Union of Italian Provinces (UPI) or the sector authorities, in order to guarantee implementation of the principle of management co-responsibility among producers, users and public administrations (optional)



Acquire data relating packaging flows into and out of the country and data of the economic operators involved and provide data and information requested by MATTM



Ensure compliance with the "polluter pays" principle towards producers and users, through determination and application of the CONAI Environmental Contribution

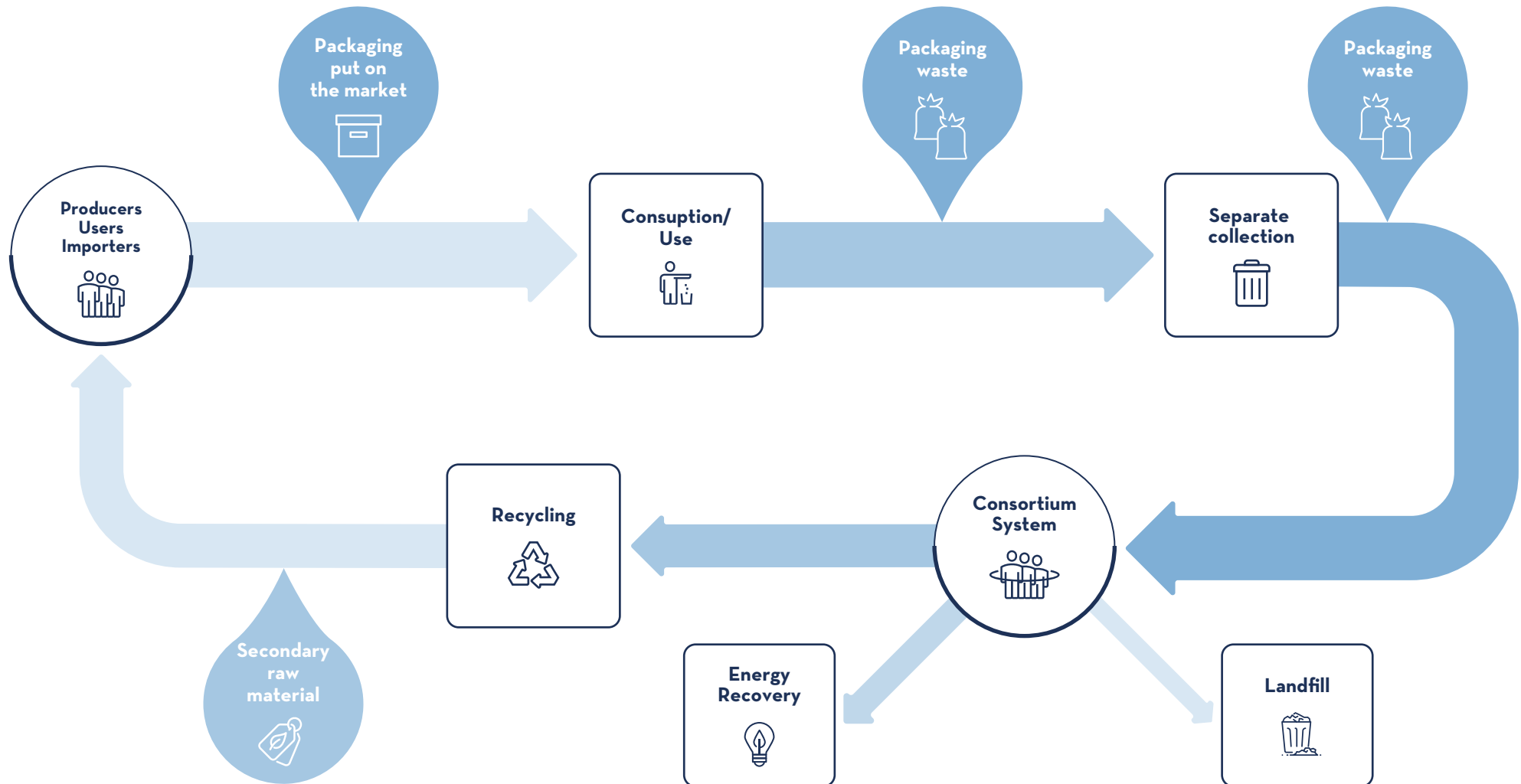


Operate according to the principle of subsidiarity, taking over from the managers of SC services in the event of inadequacy of the SC systems activated by public administrations, in order to achieve the recovery and recycling targets



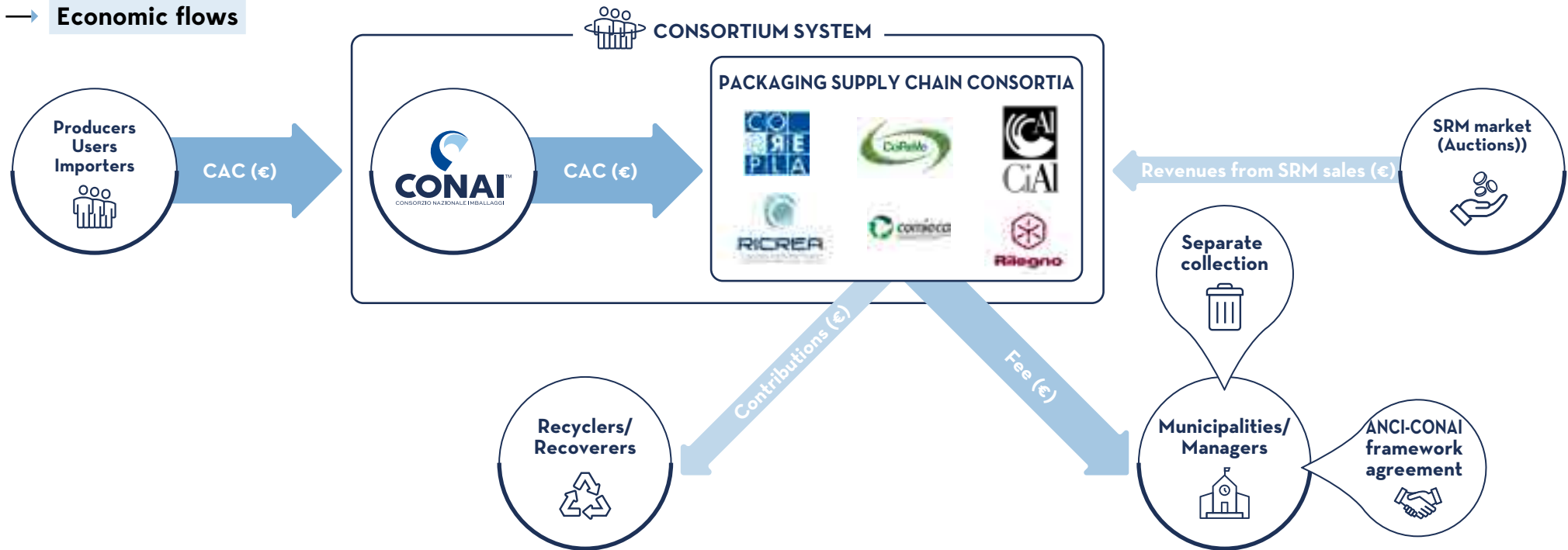
## THE CONSORTIUM SYSTEM

### → Material flows



THE CONSORTIUM SYSTEM

→ Economic flows



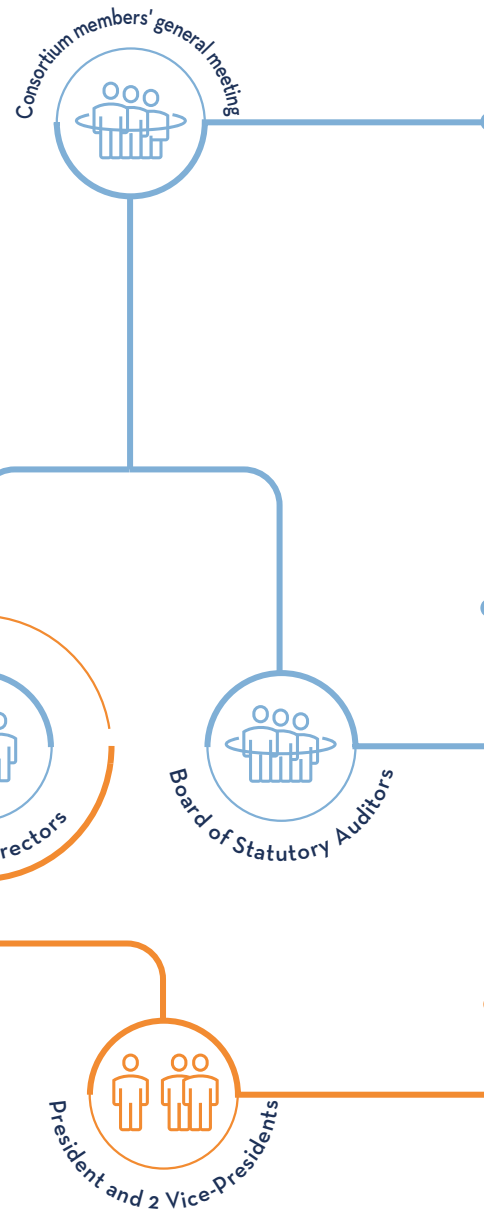
The foundation of CONAI marked the transition from a management system based on landfills to an integrated system, based on prevention and on packaging recovery and recycling. The Consortium members consist of packaging producers and users which, by paying the CONAI Environmental Contribution (CAC), in compliance with the so-called extended producer responsibility, cover the costs of collection, recovery and recycling of packaging put on the market, thus not increasing the price paid by citizens. Packaging producers are not obliged to join the Consortium: Legislative Decree 22/1997 for the management of packaging waste envisages that they can meet their obligations by organising themselves independently, provided that they ensure achievement of the targets set.

In 2019, there were approx. 792,000 CONAI consortium members, of which only 1% were packaging producers, with the remainder being users (such as importers or traders of goods already packaged, self-producers, traders of empty packaging, etc.). The CAC is used to finance the activities of CONAI and of the six packaging supply chain consortia, starting with the promotion of Separate Collection (SC), through the fee paid to municipal administrations based on that established by the Framework Agreement periodically concluded between ANCI (National Association of Italian Municipalities) and CONAI. This Agreement is voluntary and operates in total subsidiarity with respect to the market, so also municipalities (or managers) can decide whether to adhere to it or operate independently.



## GOVERNANCE

The CONAI Articles of Association and Regulations define norms and conduct underlying proper management of the Consortium, regulating relations with consortium members, decision-making processes, income and expenses management, as well as the structure and functioning of the governing bodies. Since 2006, the Consortium has adopted a Code of Ethics and an Organisation, Management and Control Model (pursuant to Legislative Decree 231/2001) that define an organic set of rules aimed at guiding the Consortium's activities in accordance with the principles of ethics, integrity and transparency. Since 2016, CONAI has implemented an Environmental Management System (EMS) compliant with EU Regulation 2018/2026 (EMAS) and the reference standard UNI EN ISO 14001/2015.



### BOARD OF DIRECTORS\_BOD\_

Consisting of 17 members, 16 of whom elected by the General Meeting from among the producers of each type of material and users and 1 indicated by MATTM and MISE as a consumers' representative. Oversees the functional areas and has all the powers and attributions for management of the Consortium not reserved for the General Meeting, including approval of the PGP, the PSP and the annual budget, appointment of the President, Vice-Presidents and General Manager.

### GENERAL MANAGER

Appointed by the Board of Directors, assists the President in execution of the resolutions of the Consortium bodies, is responsible for organisation of the Consortium, manages it and ensures for its normal activity, managing the working relationships with Consortium members.

### CONSORTIUM MEMBERS' GENERAL MEETING

Consisting of the Consortium members, it approves the Consortium's financial statements, defines strategies and objectives and decides on funding rules and operational and organisational plans.

### BOARD OF STATUTORY AUDITORS

Consists of 7 acting members and 2 alternate members, 3 of whom appointed by MISE and MEF and the others by the General Meeting. Supervises compliance with the law, the Articles of Association and the Regulations, compliance with the principles of proper administration and effective functioning of the Consortium.

### PRESIDENT AND 2 VICE-PRESIDENTS

Elected by the Board of Directors from among its members elected by the General Meeting, in accordance with the principle of alternation between the producer and user. categories The President remains in office for 3 years and represents the Consortium before third parties and in court.

## STAKEHOLDER RELATIONS

CONAI operates within a dense network of different parties, some with an active role in the national packaging waste management system, of which CONAI is an integral part, while others are influenced by it or can influence it as part of the context in which they operate.

Over the years and through the performance of its activities, CONAI has put in place relationships with these players of a structural, such as those with its Consortium Members, institutional (with ministries and government) and voluntary nature, such as those with the academic and research world, trade associations and the media.

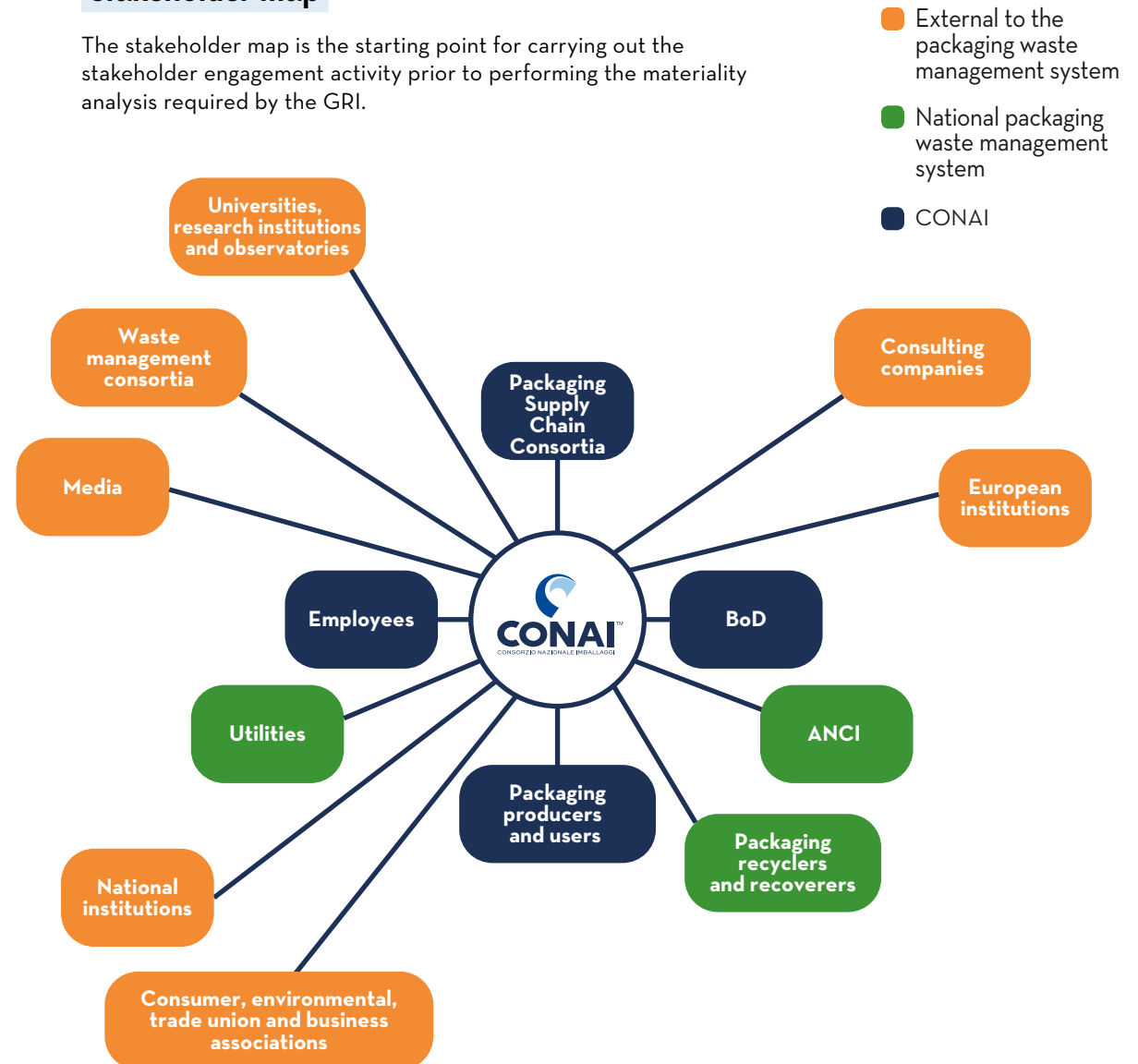
CONAI constantly provides information, on topics of interest, training and updating, through specific initiatives such as courses and seminars dedicated to companies and officials of national and local trade associations, representing packaging producers or users.

CONAI is a member of the Foundation for Sustainable Development and one of the promoters of the Circular Economy Network. These memberships give rise to moments of discussion with other players in the waste world and beyond.


At an international level, CONAI is a member of EXPRA, the Alliance for Extended Producer Responsibility, a European reference organisation representing non-profit packaging and packaging waste management systems. Through EXPRA, CONAI enters into discussion with the various European institutions and the reference consultants of the European Commission, in order to share know-how and experiences acquired in over 20 years of operation of the EPR systems participating in EXPRA.

### → Stakeholder map

The stakeholder map is the starting point for carrying out the stakeholder engagement activity prior to performing the materiality analysis required by the GRI.





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# Management performance of the Consortium system



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## THE CONSORTIUM SYSTEM IN THE ERA OF THE PANDEMIC

### 1. PRODUCTION AND IMPORTS

- ▶ Consumption for HORECA and Commerce & Industry collapses
- ▶ The demand for packaged food products, detergents and pharmaceuticals increases



#### Average reduction of 9.5% in the first half of 2020 compared to 2019

The decrease has affected all supply chains, from 7% for plastic to over 12% for wood (declarations received by CONAI).

### 2. MUNICIPAL COLLECTION

- ▶ Quantities of non-household users are falling
- ▶ Increasing quantities of household origin with differences between regions and materials



#### Average growth of 5% in the first half of 2020 compared to 2019

The quantities of aluminium and wood delivered have decreased, while the quantities of other materials, primarily paper, have increased, demonstrating the subsidiarity of the Consortium System with respect to the market.

### 3. INTERMEDIATE PROCESSING (SELECTION AND PREPARATION FOR RECYCLING)

- ▶ Significant pressure on plants due to SC increase, and slowdown of target markets



During the months of the lockdown, the System has had to cope with the saturation of the packaging waste recovery supply chains, put to the test by the closures/slowdowns of trade and of the target production sectors of secondary raw materials.

### 4. TARGET SECTORS

- ▶ Stoppage of sectors typically users of recycled material (automotive and construction)
- ▶ Export freeze with increased demand for national processing of territories and materials
- ▶ Collapse of recycling material prices

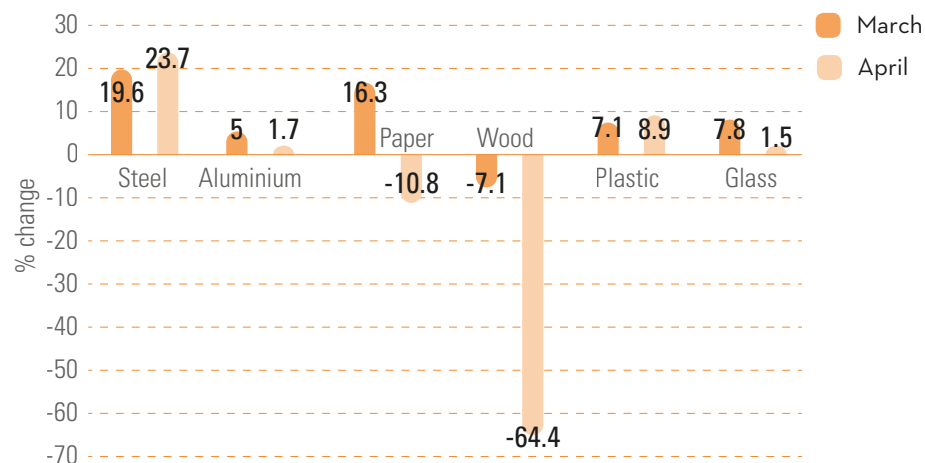


Freezing of some of the main target sectors for secondary raw materials from recycling, first and foremost automotive and construction, has caused an oversupply and a consequent fall in the values of secondary raw materials.



## THE CONSORTIUM SYSTEM IN THE ERA OF THE PANDEMIC

### Monthly change in quantities of packaging waste managed by supply chain - Comparison March-April 2020/2019



Source: CONAI

In the two-month period March-April alone, with a total lockdown, packaging waste sent to Conai increased for all materials except wood, mainly used for industrial packaging and production systems that during the lockdown were very limited. The consumer preference to buy packaged food, the rise in e-commerce

purchases and take-away food exacerbated the increase in plastics. For glass, the growth in municipal collections concerned only the first phase of the lockdown, after which the impact of the HORECA sector closure was felt.

**The onset of a waste emergency was averted thanks to the collaboration and common purpose of national and local institutions, operators and the Consortium System.**

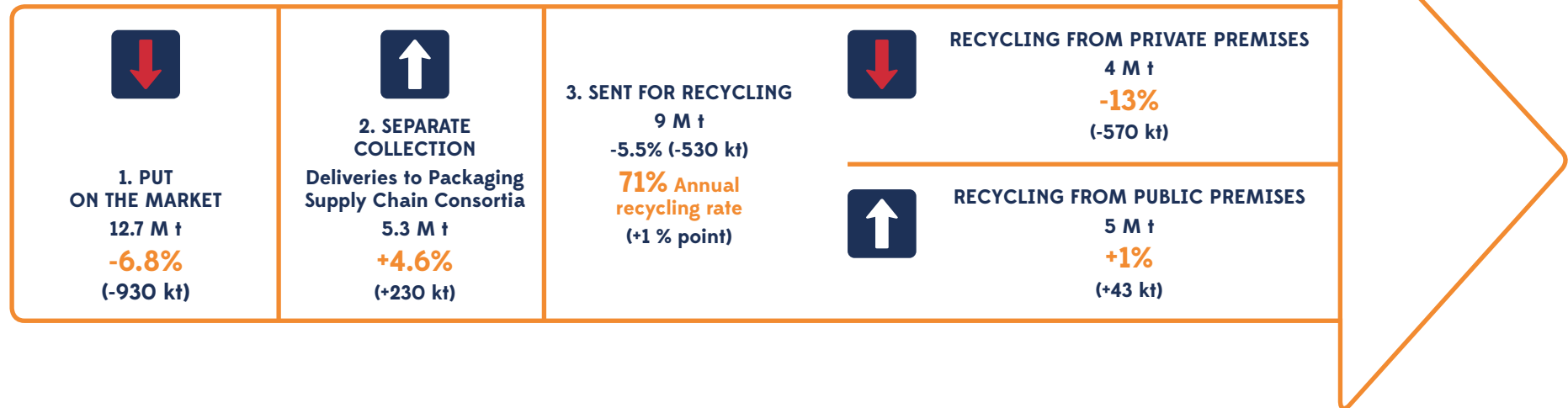


The system resisted despite an absolutely critical phase, also thanks to extraordinary measures to guarantee the collection and proper management of waste and, above all, thanks to the close collaboration of the supply chain and the common purpose of institutions, operators and CONAI. However, the emergency highlighted the structural problems of the supply chain that will have to be adequately addressed if we want to move the sector towards a circular economy model, including the strategic development of plants for the processing and recovery of waste and development of the national market for by-products.



## THE CONSORTIUM SYSTEM IN THE ERA OF THE PANDEMIC

→ Expected full-year effects (projections to 2020 closure and comparison with 2019)



Household packaging waste recycling drives recycling results and marks a +1% in a highly critical year, with nearly 53% of the overall recycling result achieved through direct intervention by the Consortium System

(was 50% in 2019). Subsidiarity and support, including economic support, to the recycling chain are once again confirmed as central to environmental protection.

## DISSEMINATION OF THE ANCI - CONAI FRAMEWORK AGREEMENT

The Agreement between CONAI and the National Association of Italian Municipalities (ANCI), provided for by art. 224 of Legislative Decree 152/2006, is voluntary and allows municipalities to sign an agreement that commits them to carry out the separate collection of packaging waste and to deliver the 6 materials at the competent packaging supply chain Consortia. The Consortia, in turn, guarantee acceptance of the material, its processing and subsequent sending for recycling, as well as payment of the fees, linked to the quantity and quality of the material delivered, to cover the higher costs of separate collection.

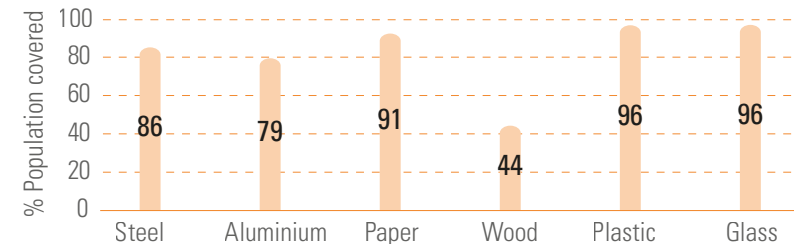
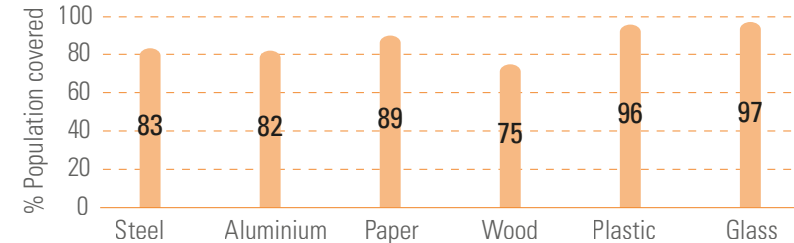
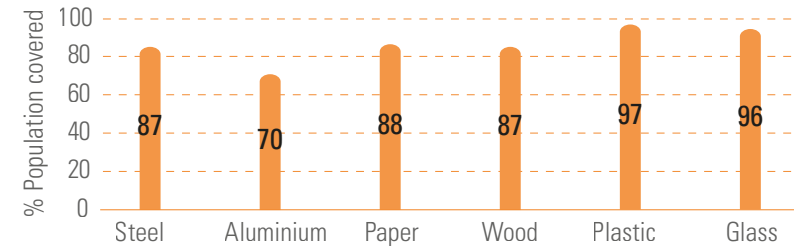
The Agreement consists of a general part, which contains the principles and the shared application methods, and six Technical Annexes, one for each material, which regulate the contents of the agreements that each Municipality, directly or through another delegated party, can sign with each supply chain Consortium.

Over the years, the share of Municipalities served, and therefore that of the population covered, has progressively increased for all the supply chains, particularly for glass, where the share of municipalities served has increased from 29% in 2002 to 92% in 2019 and that of the population covered from 41% in 2002 to 96% in 2019.



## Dissemination of the Anci-CONAI Agreement throughout the country in 2019

Percentage of population living in the Municipalities that have adhered to the ANCI-CONAI Framework Agreement by material.



Source: CONAI





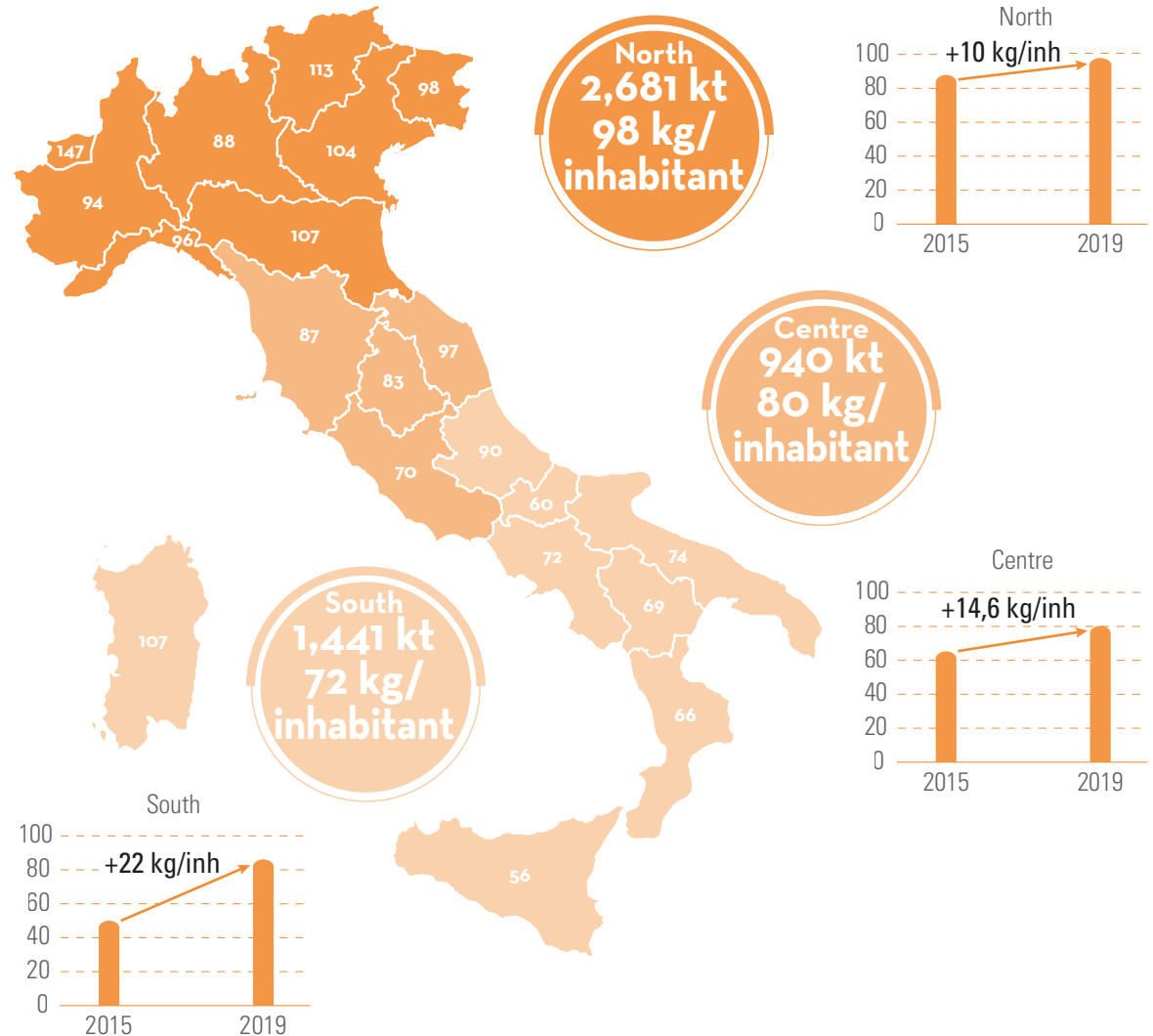
## RESULTS OF THE ANCI - CONAI FRAMEWORK AGREEMENT

In 2019, 53% of packaging waste was delivered in Northern Italy, 28% in the South and 19% in the Centre.

Between 2015 and 2019, the per capita amount of packaging waste delivered increased in all geographical macro-areas, from 50 to 72 kg/inh in the South, from 65.4 to 80 kg/inh in the Centre and from 88 to 98 kg/inh in the North.

The quantities of packaging waste delivered under the ANCI-CONAI agreement represent only a portion of the municipal waste collected separately at a national level, to which the various parts from the household circuit must be added. Nevertheless, it is precisely the collaboration with the municipalities that began with the ANCI-CONAI agreement that has been the driving force behind the growth in separate collection of municipal waste, aimed at separating and recycling other parts, first and foremost organic waste, with significant positive environmental and economic effects. According to the latest Ispra update, in 2019 separate collection reached 58.1% and landfill disposal amounted to 22%.

## Percentage of population covered by the ANCI-CONAI Agreement in 2019





## CONAI'S COMMITMENT TO THE LOCAL AREA

On the basis that agreed in the Framework Agreement with ANCI, CONAI operates throughout the country, working with local administrations, with the aim of promoting and facilitating the development of recycling-oriented packaging waste management systems, pursuing intervention policies that are consistent with the different situations that characterise the areas of the country:

- ▶ in Central-Northern regions, and in general in areas where efficient waste management systems exist, CONAI prefers relations with pan-municipal institutions, in terms of general collaboration;
- ▶ on the other hand, in regions where there are still delays in the organisation of these services (areas lagging behind), CONAI works alongside local authorities to support them in the dissemination and development of efficient packaging waste management systems.

The available resources are thus allocated to individual local projects according to the requests for support coming from the local areas, which are verified before being accepted.

In 2019, the Consortium allocated **1.3 million euros** to local projects (for a total of approx. 6.5 million citizens involved), fulfilling its commitment to support the development of differentiated waste collection and the promotion of packaging recycling activities, with particular attention, both in terms of type of projects and financial support, to areas that are lagging behind.

## → Areas of intervention of CONAI local projects in 2019





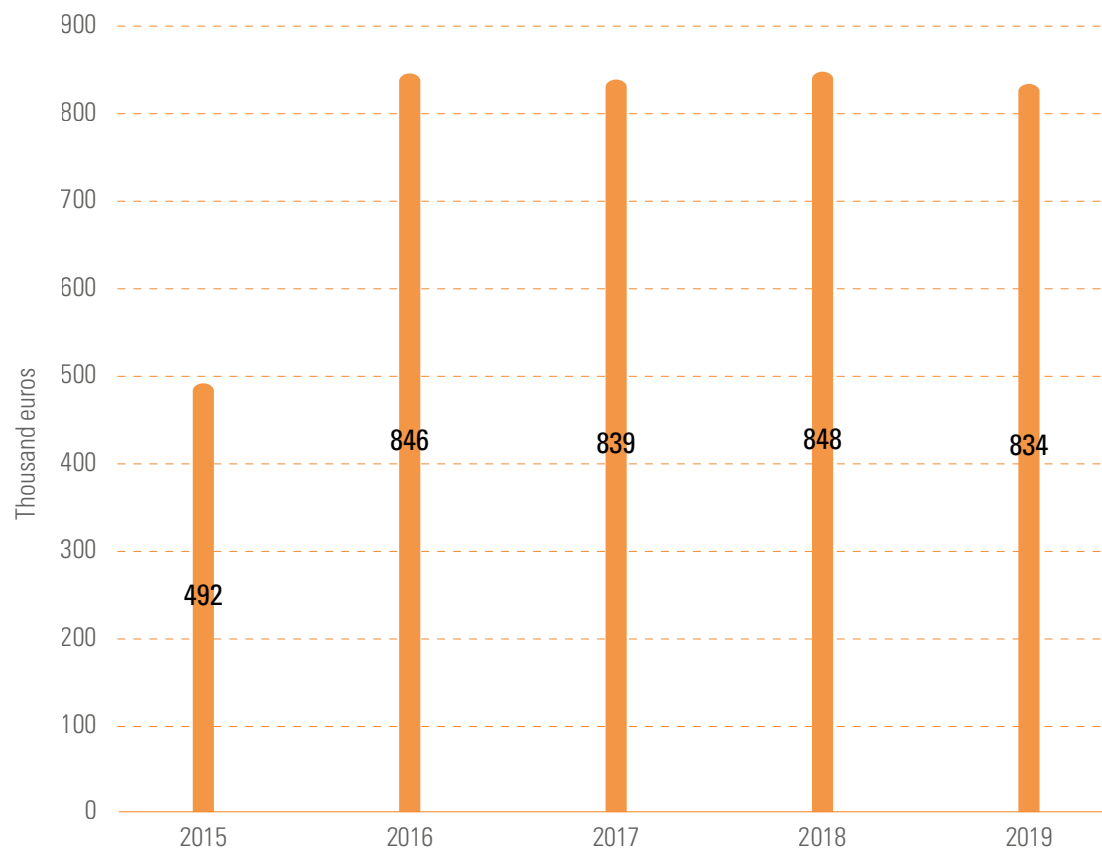
## CONAI'S COMMITMENT TO THE LOCAL AREA

In addition to pursuing national waste collection and recycling targets, the task of CONAI is also to ensure that this happens in the most balanced way possible in the different areas of the country. A proper packaging waste management system cannot be the prerogative only of those contexts that can guarantee the greatest financial returns and, for this reason, in addition to the framework agreement with ANCI, CONAI gives rise to a series of initiatives aimed at areas that are lagging behind, those areas in which, due to geographical location or lack of industrial facilities, the separate collection of packaging waste struggles to reach the minimum targets imposed by current legislation.

In 2019, the Consortium allocated **834 thousand euros** to local projects of financial support to areas that are lagging behind, equal to more than 60% of the expenses for local projects sustained by the Consortium in the same year, investments that in the last few years have remained constant and at a value exceeding 800 thousand Euros.

Investments in these areas were mainly in activities for the local development of collection services, support for local communication and training of technicians and administrators. These initiatives are also flanked by experimental projects, concentrated mainly in large urban areas in central and southern Italy, to improve collection quality and quantity.

## Investments in local projects to support areas lagging behind from 2015 to 2019



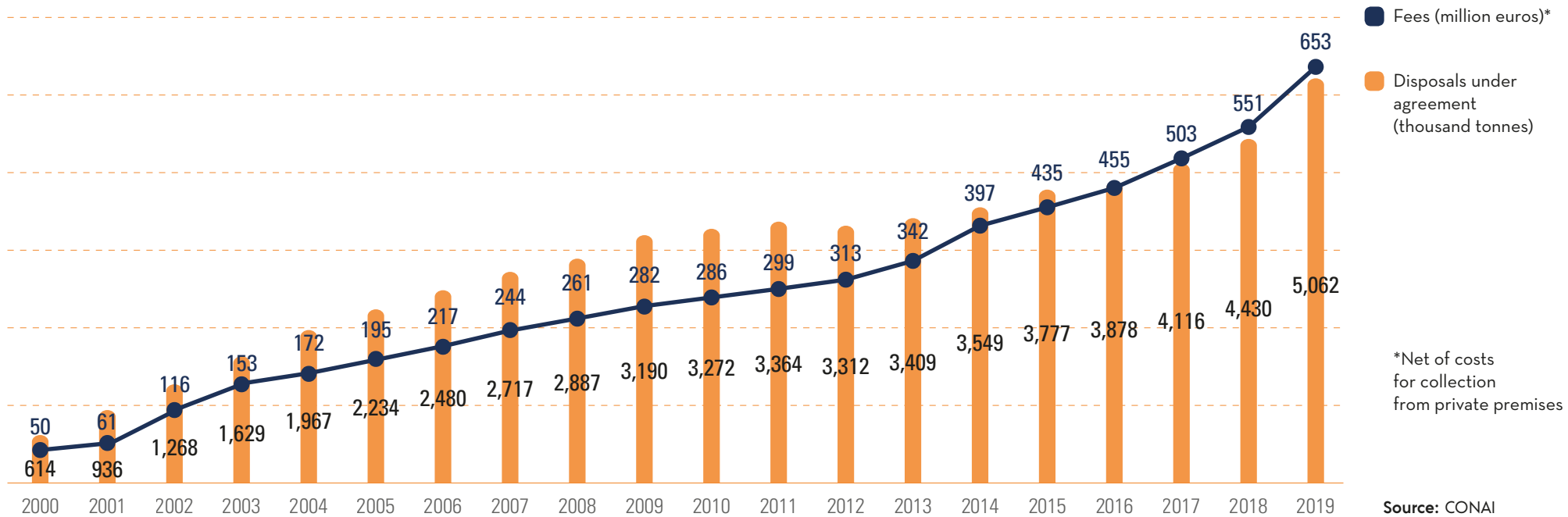
Source: CONAI

## CONAI SUPPORT FOR SEPARATE COLLECTION

The fee paid to the Municipalities by the packaging supply chain Consortia is the tool through which CONAI promotes the growth of SC of packaging waste. The amount of fees paid to affiliated Municipalities, against the packaging waste delivered, grew 13 times between 2000 and 2019, from 50 million euros to 653 million euros. Overall, in 20 years the system has paid more than 6 billion euros to Municipalities, with a constant growth trend.

Also the quantities of packaging waste delivered by affiliated municipalities increased, from 614 thousand tonnes to over 5 million tonnes between 2000 and 2019, with a 8-fold increase. Even in the midst of the economic crisis, the collection of waste from SC the corresponding financial payments to municipalities continued to grow, despite the contraction of the market for secondary raw materials and the lower income from environmental contributions related to the fall in the amount put on the market.

### → Fees paid to Municipalities and packaging delivered under affiliation from 2000 to 2019



Source: CONAI



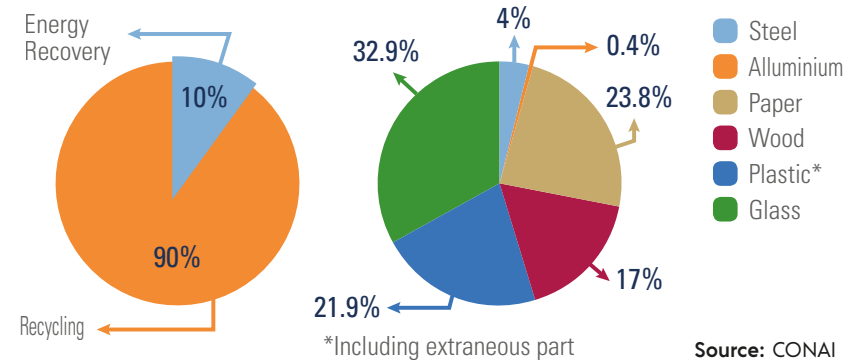
## RECYCLING AND RECOVERY PERFORMANCE OF THE CONSORTIUM SYSTEM

In 2019, packaging sent for recovery by the CONAI supply chain amounted to 5.4 million tonnes, 90% of which was recycled and the remaining 10% used for energy recovery. The share of packaging waste, in particular plastic, sent for energy recovery is progressively growing (553 thousand tonnes in 2019 against 115 thousand in 2005): a stimulus for the country to invest in order to increase the quality of SC and the domestic demand for recycled materials.

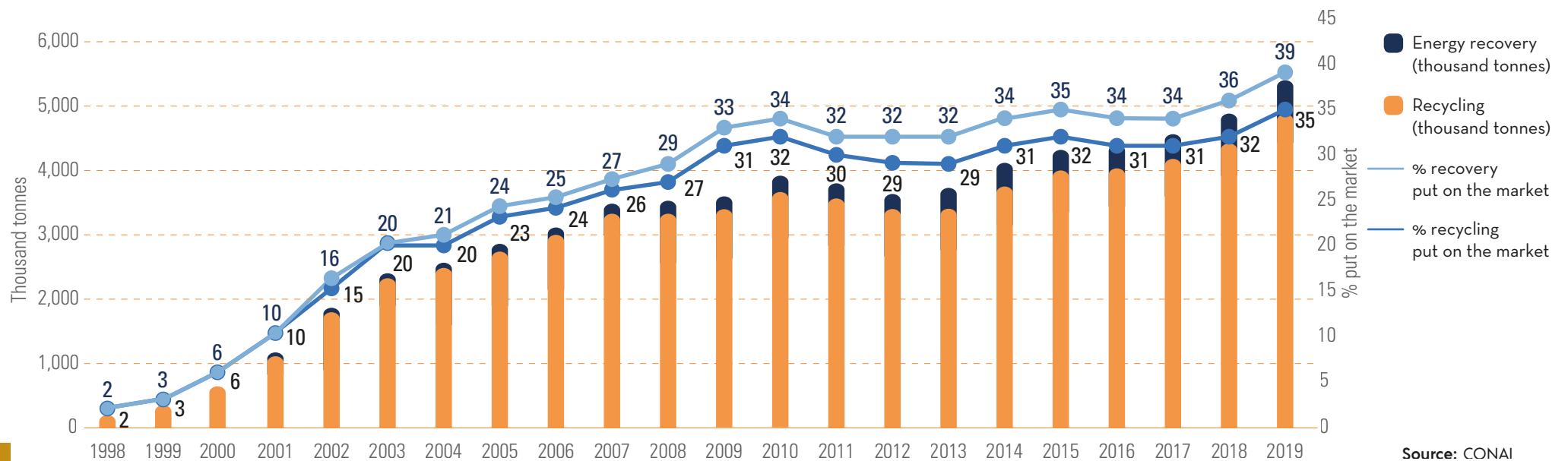
In terms of participation in achievement of the national performance, CONAI contributes 39% to the recovery rate of national packaging waste, equivalent to 81% of the amount put on the market in 2019. This contribution was 2% in 1998, when national recovery performance stood at 33%.

With reference to recycling, CONAI contributes 50% to the recycling rate of national packaging waste, equivalent to 70% of the amount put on the market in 2019. This contribution was 2% in 1998, when national recycling performance stood at 31%.

## Breakdown by destination and type of material of the 5,351 kt recovered in 2019 by the CONAI system



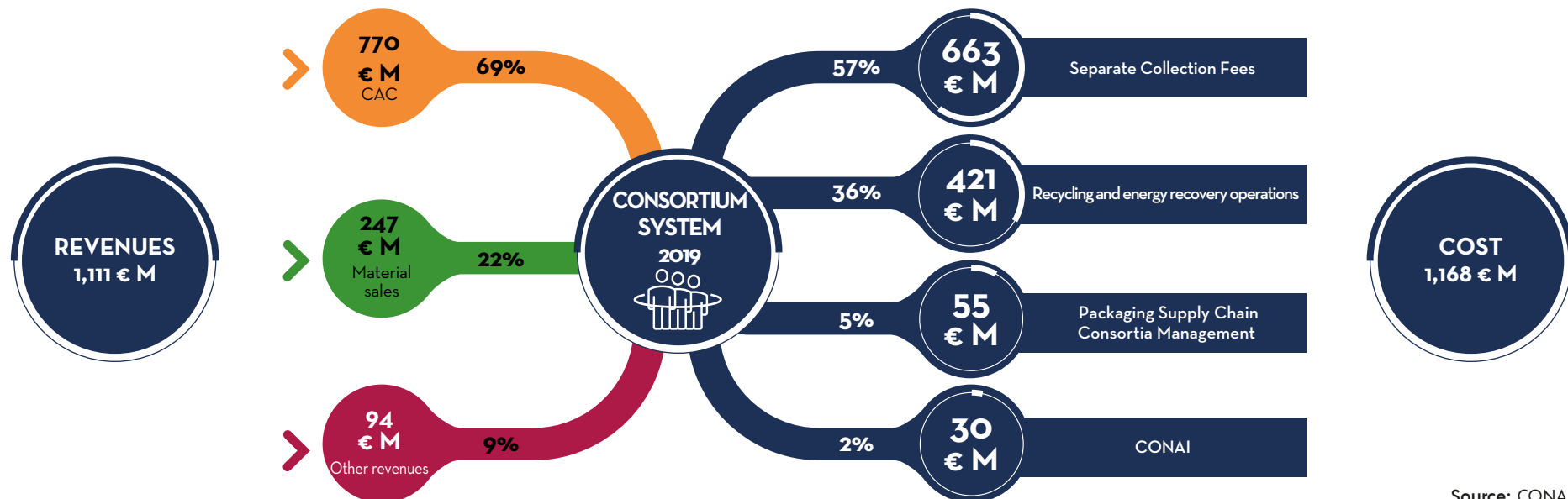
## Packaging waste sent for recovery by the Consortium System compared to that put on the market from 1998 to 2019



## ECONOMIC FLOWS OF THE CONSORTIUM SYSTEM

The objective of the Consortium System, given that it consists of non-profit Consortia, is not to increase its revenues, mainly deriving (69% in 2019) from environmental contributions paid by producers and users of packaging to cover its end-of-life management costs, but to maximise its environmental performance in the most economically efficient way, i.e. with the aim of minimising the contributions required per unit of waste produced, incentivating the use of increasingly reusable and recyclable packaging. The Consortium System's economic flows have grown significantly in recent years, with revenues increasing from 616 to 1,111 million euros and costs from 683 million to 1,168 million euros between 2014 and 2019. The negative balance between revenues and costs that characterised 2019 was absorbed by the reserves generated by operating surpluses of previous years.

In recent years, there has been a reduction in both absolute value and percentage share of total revenue of income from the sale of materials, which fell from a share of 31% in 2014 to 22% in 2019, as a result of the sharp decline in the prices of virgin raw materials. On the cost side, the economic value allocated by the CONAI system to support waste management activities represents approximately 93% of the total expenses incurred by the system. Net of the internal management costs of the Consortia this amounts to 1,084 million euros. The portion of costs relating to the operation of CONAI and packaging supply chain consortia fell from 12% to 7% between 2014 and 2019, while the share allocated to support recycling and recovery activities, also marked by the fall in the prices of virgin raw materials, grew significantly. The share allocated to separate waste collection remains substantially constant.



Source: CONAI



## RESEARCH AND DEVELOPMENT ACTIVITIES

In 2019, the Consortium System invested over 1.2 million euros in research and development activities. These activities are carried out with a common commitment by the 6 packaging supply chain consortia and **focus on three main axes** of the waste management hierarchy:







## RESEARCH AND DEVELOPMENT ACTIVITIES



### → COREPLA

It supports research for the depolymerisation of plasmix, through pyrolysis processes with the aim of producing raw materials suitable for use in the petrochemical industry, and research into gasification technology for the transformation of plasmix into CO<sub>2</sub> and hydrogen. COREPLA has also completed research into the mechanical recycling of polystyrene packaging and research into the depolymerisation of PET trays to produce an intermediate product for use in the production of new raw materials for the food packaging sector.



### → COREVE

It has pursued three significant research projects: the first for the use of waste fractions coming from the processing of glass packaging waste in substitution of traditional raw materials, with the advantage of decreasing CO<sub>2</sub> emissions and reducing the waste sent to landfills; the second to improve the technological performance of sorting plants in the elimination of polluting fractions such as infusions and lead from the finished product; finally the study to evaluate the negative consequences of the presence of plastic bags in collection on the performance of sorting plants.



### → CIAL

It has conducted a study on the separation and recovery of metals present in slag aimed at exploring the potential for extracting and recycling aluminium from bottom ash, confirming the potential of this treatment in maximising the recovery of materials otherwise destined for final disposal. With reference to the selection and processing of flows from multi-material separate collections, CIAL has commissioned a study to define the current scenario of the best technologies on the market, able to guarantee the best possible options in terms of quality of aluminium destined for recycling plants.



### → RILEGNO

It focuses on the identification and promotion of activities, alternative to the production of chipboard, which today absorbs over 95% of post-consumption wood waste. Alternative activities include the use of wood pulp for paper mills, where wood replaces virgin cellulosic fibre, and the production of wood cement blocks for the building industry, which have the advantage of making structural blocks lighter, as well as guaranteeing the transpiration of walls and a good support for finishing plasters in buildings.



## COMMUNICATION AND AWARENESS-RAISING ACTIVITIES



Also in 2019 CONAI and the six packaging supply chain Consortia continued to implement projects and information and awareness campaigns aimed at citizens, businesses and institutions, in line with their mission, in order to support the achievement of packaging waste recycling targets and promote a circular economy.

### → “The voice of the leaders” CAMPAIGN

The institutional press campaign “The voice of the leaders”, developed together with the consortium companies, through the personal involvement of entrepreneurs, managing directors and chairmen, testifies the adhesion of companies to the Italian recycling system, able to provide a concrete contribution to the environment and to the circular economy. In the second half of the year, the campaign was extended with four new testimonials, leaders of nationally renowned companies.

### → #controglisprechi initiative

The initiative, promoted for the second consecutive year, in collaboration with Federdistribuzione, ANCC Coop and ANCD Conad, FIDA and Confcommercio, is aimed at educating citizens on the conscious use of different types of bags, their environmental impact and the consequent need to reuse and recycle them. Seven distribution companies have adhered to the initiative, with over 2,000 stores: Auchan Retail Italia, Bennet, Carrefour Italia, Esselunga, Italbrix, Leroy Merlin and Penny Market.

### → The “Class Recycling” School Project

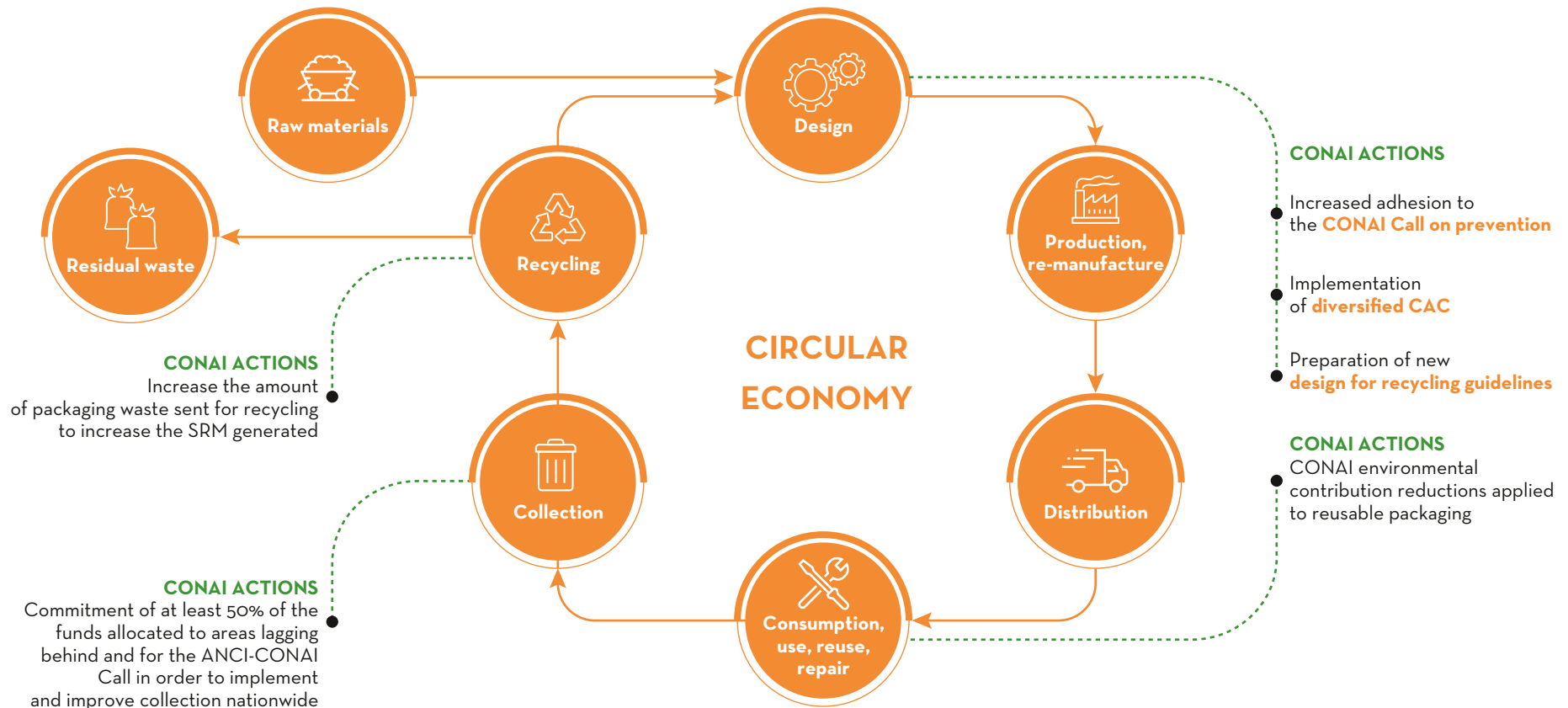
The “Class Recycling” School Project, addressed to primary schools throughout the country and implemented with the participation of 403 classes with 1,047 documents and 11,200 pupils, reached its fourth edition. The top ranking classes, in Campobasso and Palo del Colle (BA), received a day of animation on the theme of recycling for the entire school and educational materials as a prize. For the 2019/2020 school year, the school project has been renewed by developing a new educational programme and bringing on stage a veritable play with text, original scenes and costumes and actors, in which packaging materials become characters and the value of recycling is the leading role.

### → The Green Jobs training project

CONAI, sustainability partner of Matera European Capital of Culture 2019, together with the Matera-Basilicata 2019 Foundation, the Municipality of Matera, the Chamber of Commerce of Basilicata and the University of Basilicata, created a high-level training project for the development of Green Jobs, focusing on young people and the circular economy: a series of training courses and seminars on waste management and recovery for the development of tomorrow's recycling skills.



## CONAI COMMITMENTS FOR THE CIRCULAR ECONOMY





## DIVERSIFIED CAC

Separate collection is the main tool for the pursuit of recycling targets, but it is not enough on its own: currently, in fact, not all the packaging collected separately can be sent for recycling.

For this reason, it is necessary to encourage innovative design models and their production, on the part of packaging producers and users, in order to make it increasingly easy to recycle.

In 2018, CONAI introduced a **diversified environmental contribution for plastic packaging** which provides for different contribution values according to the criteria of sortability, recyclability and the prevailing circuit of destination (“Household” or “Commerce & Industry”). The levels and packaging types included in them are subject to updating on the basis of changes in packaging characteristics, as well as the technologies used in sorting and processing plants.

**Growing attention to the issue of recyclability for companies with greater involvement in their support by CONAI and COREPLA.**

### → Contribution levels for plastic packaging in force in 2019

#### LEVEL A (€ 150/t)

Sortable and recyclable packaging from the “Commerce & Industry” circuit

#### LEVEL B1 (€208/t)

Packaging from the “Household” circuit with an effective and consolidated sorting and recycling chain

#### LEVEL B2 (€263/t)

Other sortable and recyclable packaging from the “Household” circuit

#### LEVEL C (€ 369/t)

Packaging currently not sortable/recyclable



## DIVERSIFIED CAC

Within the scope of the activities aimed at implementing the new fully operational model planned for 2020, the packaging lists have been extended with new definitions and clarifications of a general nature and some types of packaging have been reallocated to different contribution levels according to the results of the analyses carried out concerning their sortability and recyclability according to current technologies already developed or in the consolidation and development phase. These changes, operational from 1 January 2020, have led to a redefinition of the levels, also taking into account the increase in the average value of the environmental contribution for plastic packaging, from €263 to €330 per tonne.

As of 1 January 2019, a **diversification also for paper and cardboard packaging** was introduced, envisaging an additional contribution (an extra-CAC of €20/tonne) for poly laminated packaging suitable for containing liquids and more difficult to recycle, an additional contribution to create a dedicated recycling chain.

### → Contribution levels for plastic packaging in force in 2020

#### LEVEL A (€ 150/t)

Packaging with an effective and consolidated industrial sorting and recycling chain, mainly from the "Commerce & Industry" circuit

#### LEVEL B1 (€208/t)

Packaging with an effective and consolidated industrial sorting and recycling chain, mainly from the "Household" circuit

#### LEVEL B2 (€ 436/t)

Packaging with an industrial sorting and recycling chain in the process of consolidation and development - from the "Household" and/or "Commerce & Industry" circuit

#### LEVEL C (€ 546/t)

Packaging with experimental sorting/ recycling activities in progress or not sortable/recyclable with current technologies



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# Environmental benefits of the Consortium System

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## LIFE CYCLE COSTING TOOL

In 2005, CONAI launched a voluntary project, called “Obiettivo riciclo” (Objective: Recycling), aimed at determining and validating, by a third party, the data concerning that put on the market, recycling and recovery for all packaging material flows. This activity involves CONAI, the Packaging Supply Chain Consortia, the CONIP Consortium and a certification body, as well as a team of specialists for each material.

The parties participating in the project are subject to documentary verification and compliance with certain quality criteria, in addition to a series of checks directly at the plant.

“Obiettivo riciclo” has provided a solid database and primary information, starting from which, in 2015, a Life Cycle Costing (LCC) methodology was developed which, through a tool specially developed and updated every year, quantifies and monitors the (direct and indirect) environmental and economic benefits generated by the recycling of packaging waste in Italy. The Life Cycle Costing (LCC) analysis methodology concerns the estimation of monetary costs that originate in all stages of the life of a product or service.

### → Performance indicators of the LCC Tool

#### RECOVERY OF MATERIAL AND ENERGY

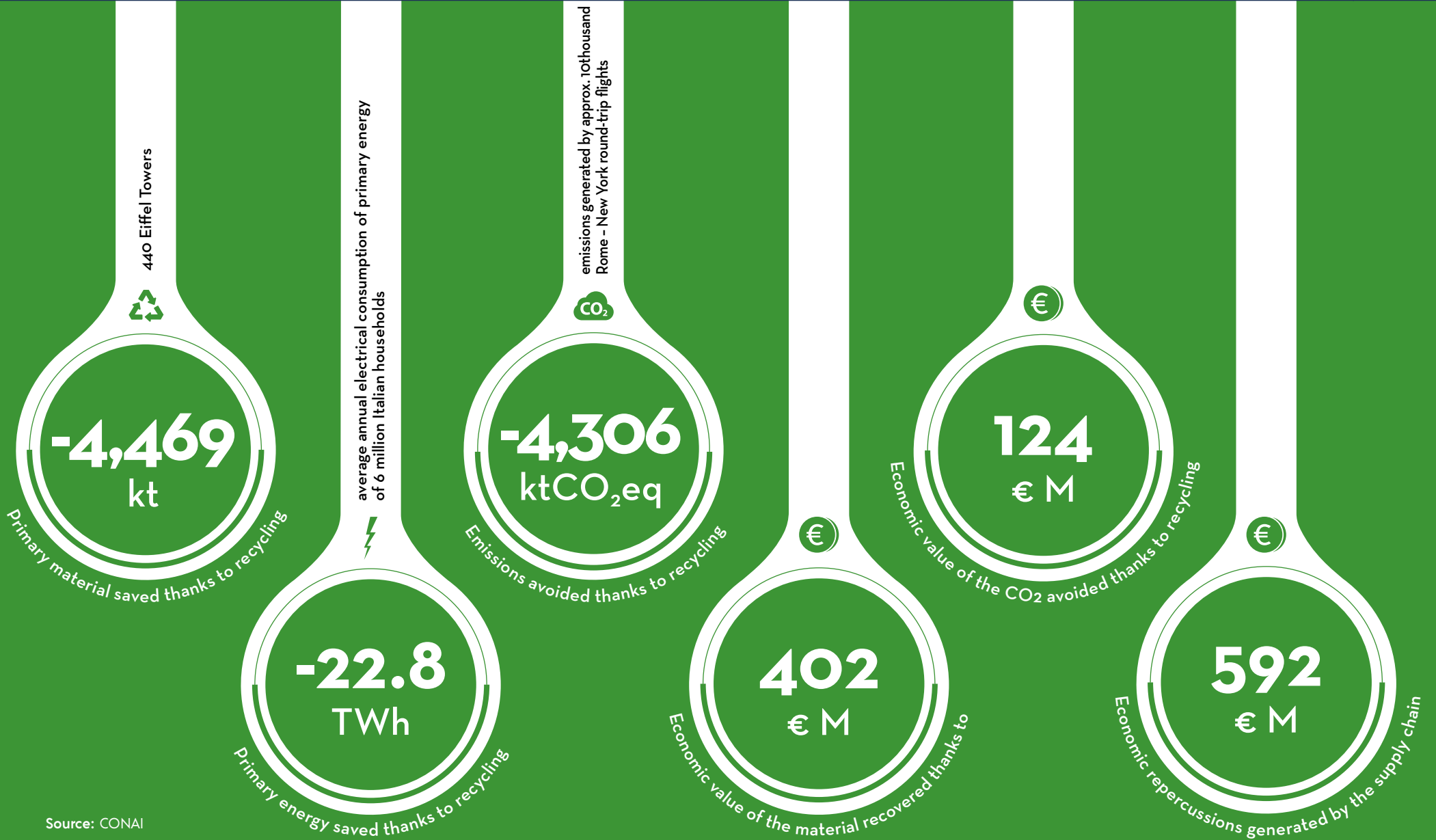
- ▶ material recovered from recycling
- ▶ electricity generated from energy recovery
- ▶ thermal energy generated from energy recovery

#### ENVIRONMENTAL BENEFITS

- ▶ raw material saved due to recycling
- ▶ primary energy saved due to recycling
- ▶ CO<sub>2</sub> generation avoided due to recycling
- ▶ CO<sub>2</sub> generation avoided due to energy recovery

#### LIFE CYCLE COSTING

- ▶ direct System costs
- ▶ direct benefits: economic value of material recovered due to recycling; economic value of electricity and heat generated due to energy recovery; economic repercussions generated by the system
- ▶ indirect benefits: economic value of the CO<sub>2</sub> avoided due to recycling and energy recovery



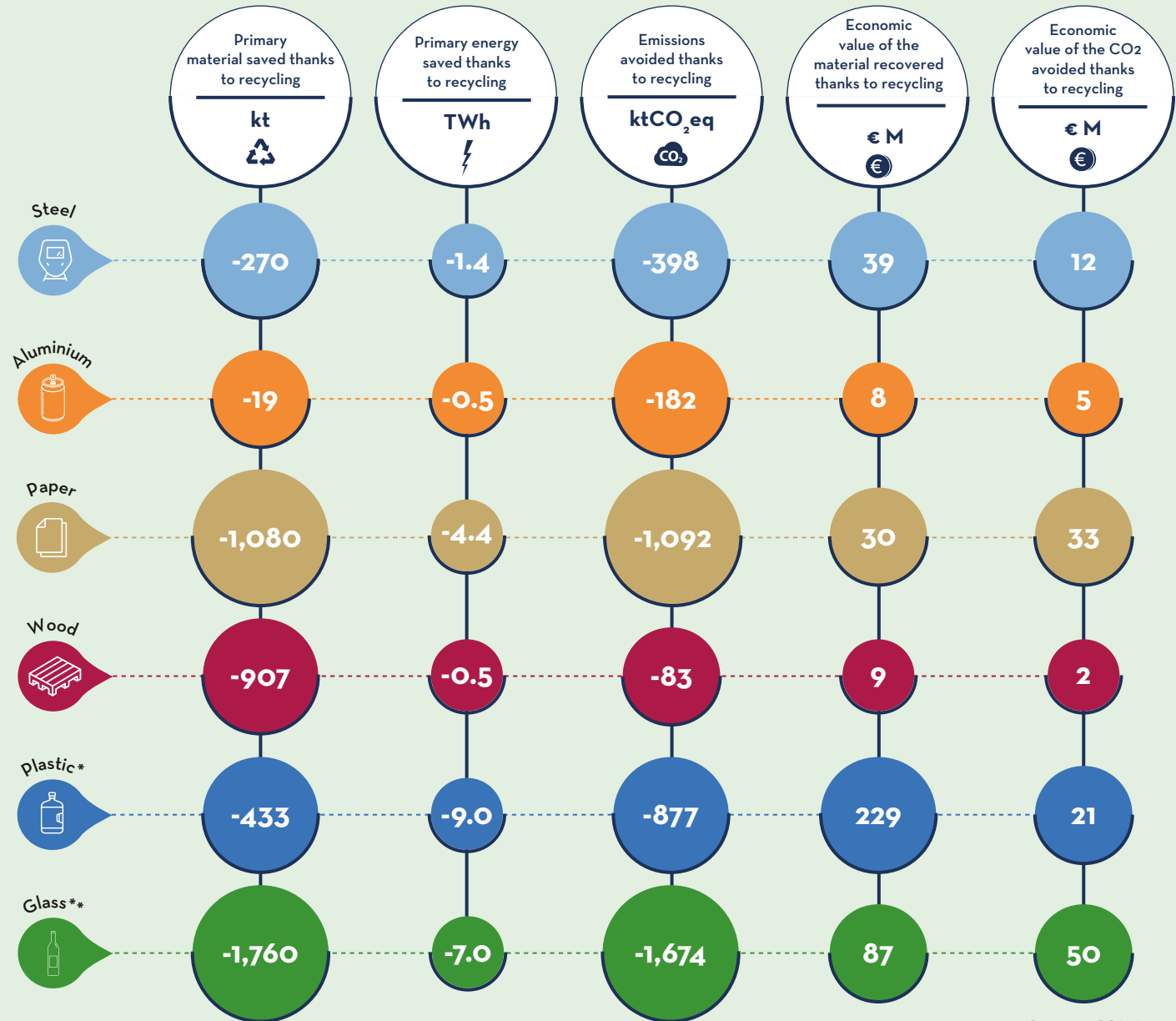
Source: CONAI

→ Environmental and socio-economic benefits of CONAI-Packaging Supply Chain Consortia management in 2019

→ **Environmental and socio-economic benefits of the six Packaging Supply Chain Consortia management in 2019**

\*The energy recovery from plastics produced and used 0.33 TWh of electrical and thermal energy, for an economic value of €27M.

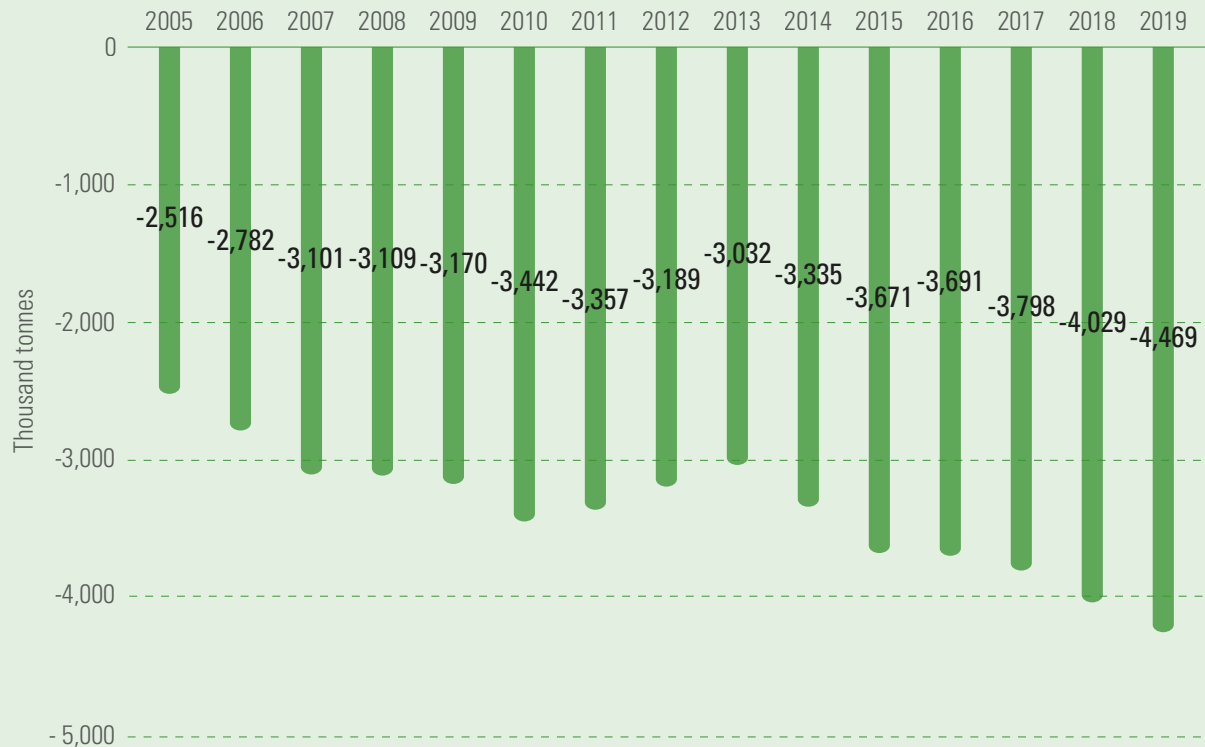
\*\*This indicator considers new glass not produced thanks to glass packaging recycling in 2019 (ratio of 1 to 1 of replacement of recycled glass compared to new glass). In terms of virgin raw material saved, the quantity would rise to 2,059 kt (1.17 to 1 ratio of substitution of virgin raw material to recycled glass).



Source: CONAI

**MATERIAL SAVED**

→ **Primary material saved thanks to consortium management recycling from 2005 to 2019**

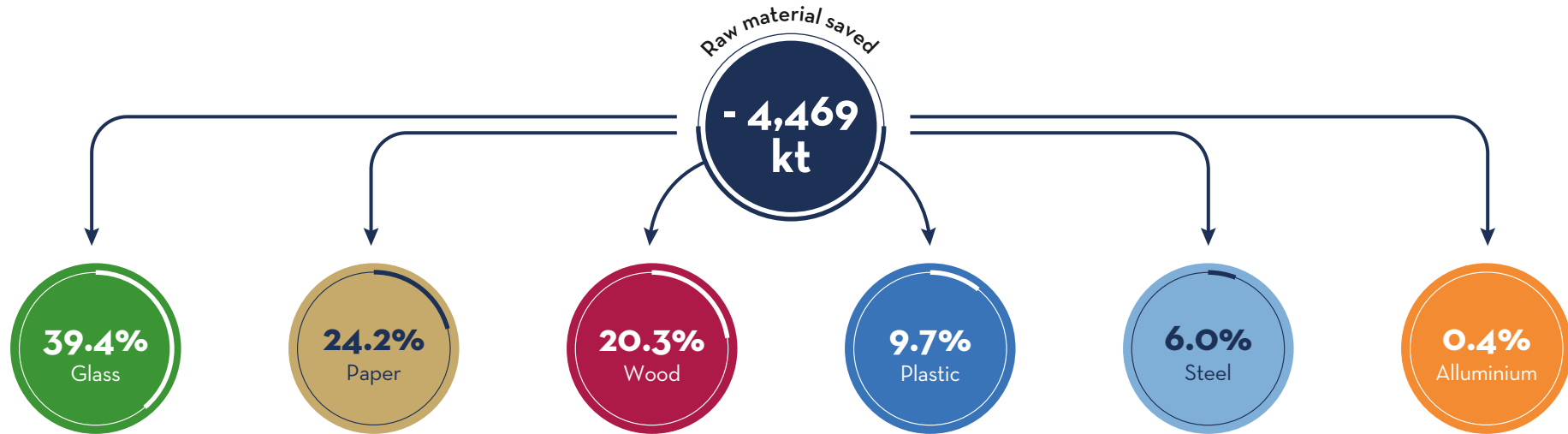


In 2019, packaging waste sent for recycling by the Consortium System **avoided the consumption of approx. 4.5 million tonnes of virgin primary material** equal to the weight of **440 Eiffel towers**

Source: CONAI

**MATERIAL SAVED**

→ Percentage of raw material saved through recycling by material in 2019



Source: CONAI

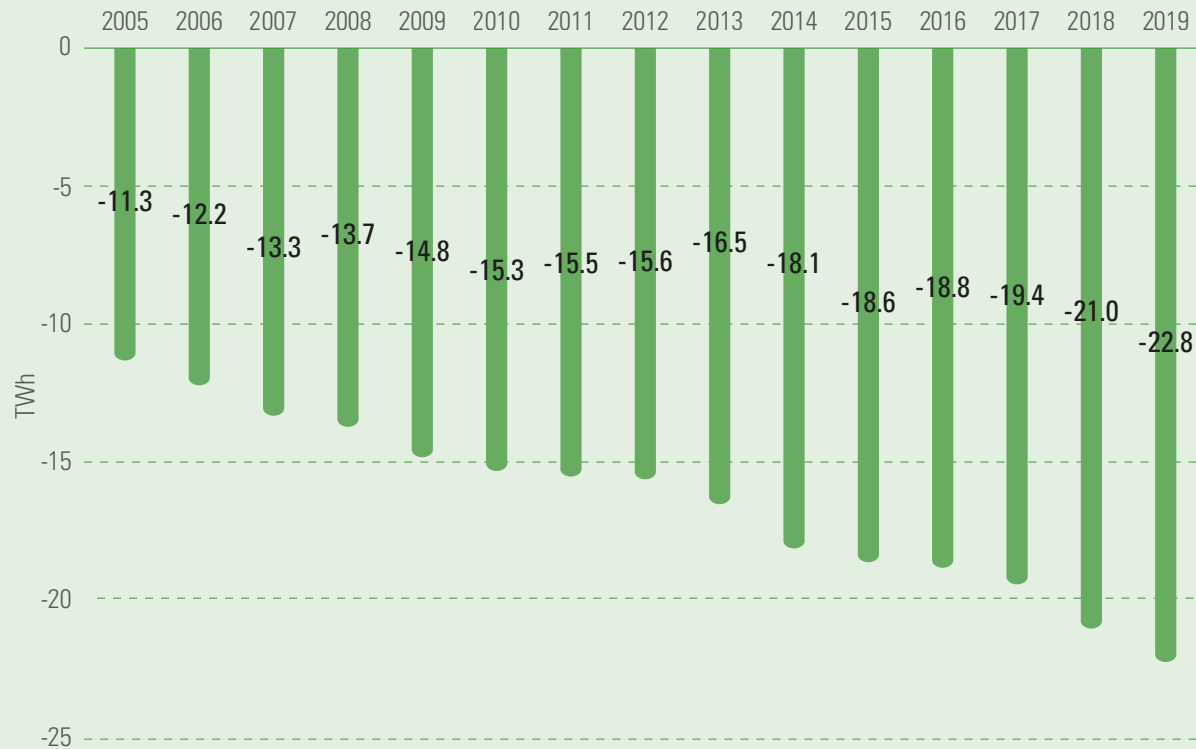
Using the **LCC Tool**, it is possible to measure the quantity of materials saved thanks to the use of secondary raw materials obtained from waste sent for recycling by the various CONAI supply chains.

This value is calculated, in particular, by estimating the quantity of material that would have been necessary to make a new packaging equivalent to one made entirely of secondary raw material. Thanks to the increase in quantities of packaging waste sent for recycling in the Consortium System management,

this benefit has increased over time, from approx. 2.5 million tonnes of materials saved in 2005 to over 4.5 million tonnes in 2019, and generating a cumulative saving over the entire period of over 50 million tonnes of primary material. Analysing the contribution of the individual supply chains, in 2019 alone, 39% of this benefit for the country was attributable to the secondary raw material produced by the recycling of glass packaging waste, followed by that of paper and cardboard and then wood, both just over 20%.

ENERGY SAVED

→ Primary energy saved thanks to consortium management recycling from 2005 to 2019



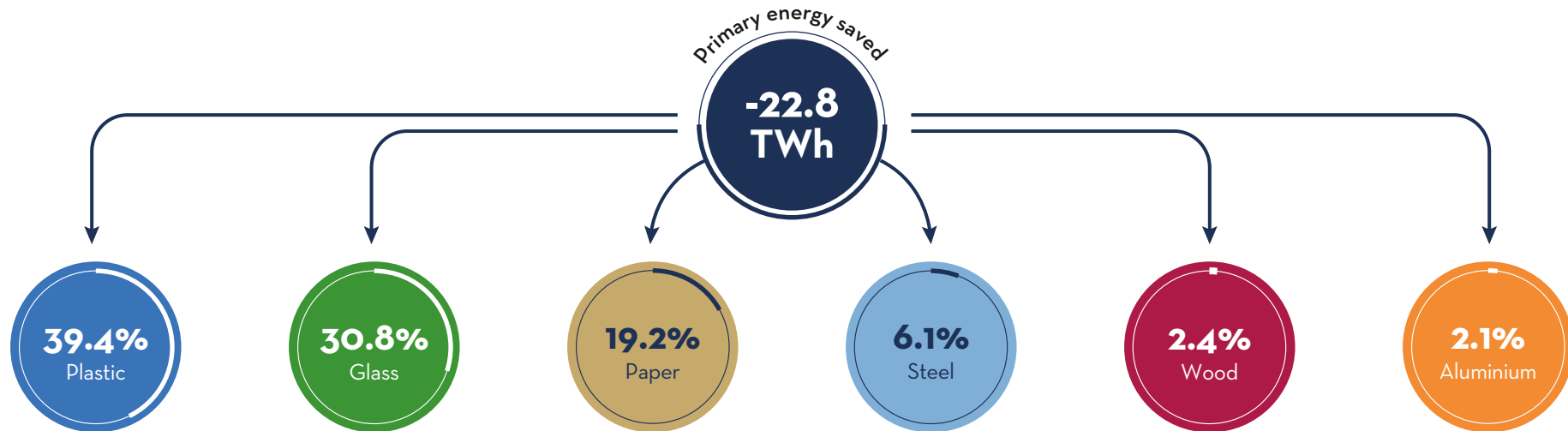
Thanks to the packaging recycling guaranteed by the Consortium, **the consumption of 23 TWh of primary energy was avoided**, equal to the average energy consumption (electricity and gas for household use) of approx. **6 million Italian households**

Source: CONAI

**ENERGY SAVED**



→ **Percentage of primary energy saved through recycling by material in 2019**



Source: CONAI

The primary energy saved through recycling corresponds to the amount of energy from fossil sources that has not been consumed thanks to the use of secondary raw material to create a good, instead of materials derived from virgin raw material. Compared to 2005, the energy savings resulting from packaging recycling managed by the CONAI system doubled. Overall, between 2005 and 2019, packaging recycling by the CONAI supply chain allowed Italy to avoid the consumption of approx. 247 TWh of primary energy, recording a constantly growing trend, even during the economic slowdown and partial reduction of the quantities of packaging waste put on the market. Unlike the first material

savings indicator, glass is the second largest contributor to the generation of the environmental benefit, while the largest contribution to overall primary energy saved through recycling is plastic with a share of 39%.

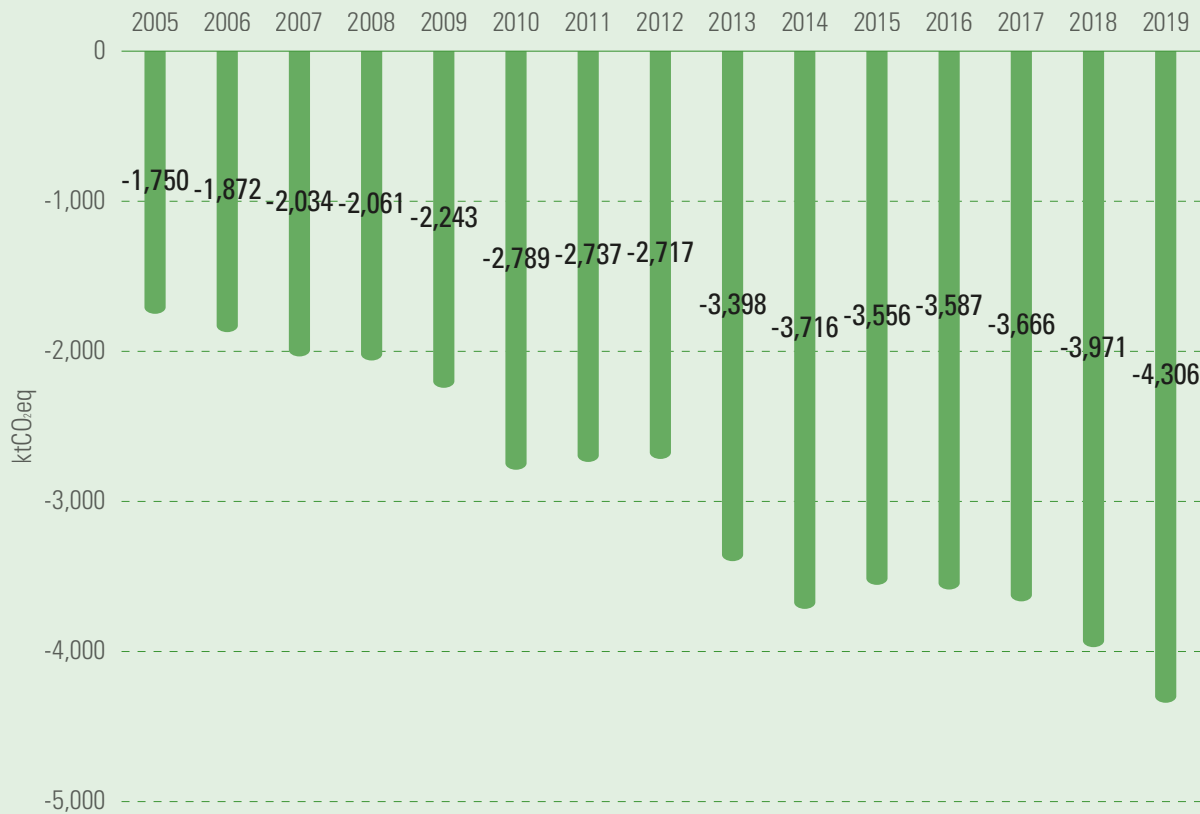
Not all sorted packaging waste is suitable for recycling, in which case the preferred destination should be energy recovery for the production of electricity and heat. In the CONAI supply chain, plastic packaging waste is mainly sent to this destination, which in 2019 generated approx. 0.11 TWh of electricity and 0.22 TWh of thermal energy, thus avoiding the consumption of fossil fuels.



## GREENHOUSE GAS EMISSIONS AVOIDED



→ Greenhouse gas emissions avoided thanks to consortium management recycling from 2005 to 2019

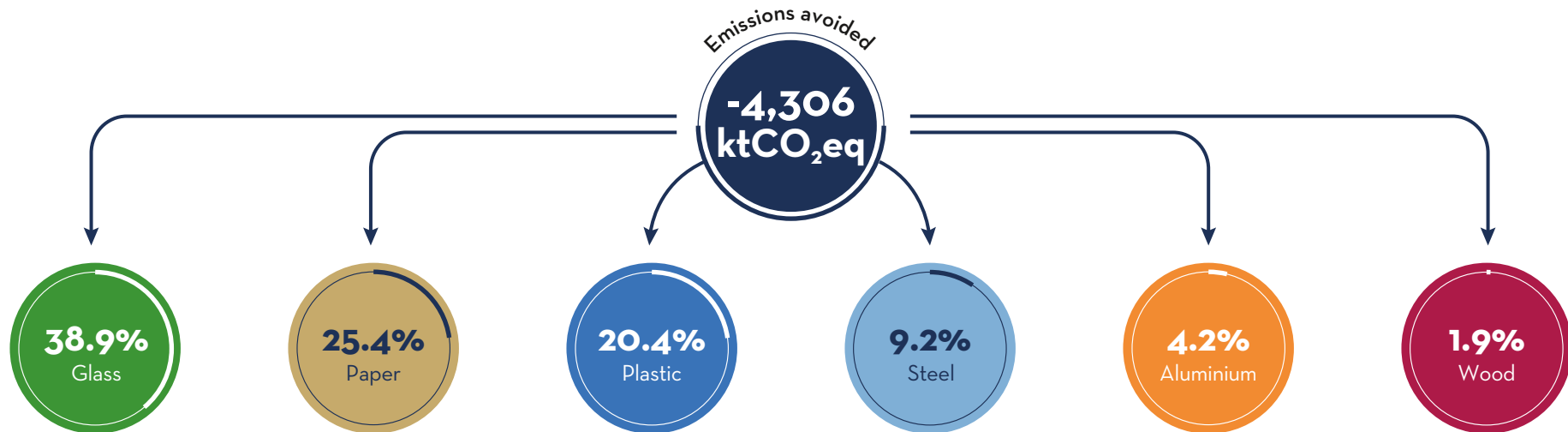


In 2019, the activities for preparing the recycling of packaging waste managed by the CONAI system involved energy consumption of almost 0.9 TWh. This consumption and transport of the material from the delivery platforms to the recycling plant, generated emissions of 549 thousand tCO<sub>2</sub>eq. At the same time, the recycling of packaging waste ensured by the CONAI supply chain **avoided emission into the atmosphere of almost 4 million tonnes of Co2eq<sub>2</sub> equal to the emissions generated by approx. 10 thousands Rome-New York round-trip flights**

Source: CONAI

## GREENHOUSE GAS EMISSIONS AVOIDED

→ Percentage of emissions avoided through recycling by material in 2019



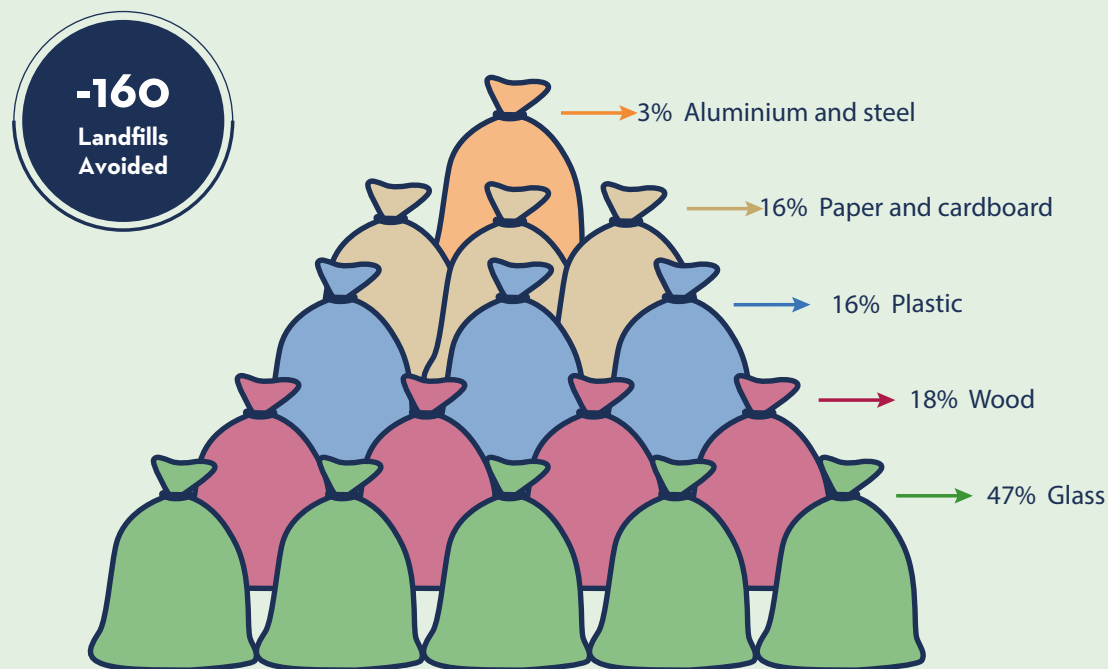
Source: CONAI

The recycling sector also makes an important contribution to combating climate change and reducing greenhouse gas emissions. This indicator measures emissions avoided, calculated in CO<sub>2</sub> equivalent (CO<sub>2</sub>eq), applying specific emission factors to the materials saved through recycling separately for each part, obviously net of emissions from the transport and processing of packaging waste.

Emissions avoided in 2019, thanks to the sending of packaging waste for recycling by the CONAI supply chain, more than doubled compared to 2005 and amounted to 44 million tonnes of CO<sub>2</sub>eq in 15 years. 39% of the greenhouse gas emissions avoided in 2019 was due to the recycling of glass packaging waste, followed by paper & cardboard and plastic in that order.

## LANDFILLS AVOIDED THANKS TO RECYCLING

→ Landfills avoided due to packaging waste sent for recycling by consortium management between 1998 and 2019



Between 1998 and 2019, the CONAI system ensured that almost 32 million tonnes of packaging was sent for recycling, removing year after year increasing quantities of materials from landfills. That means that in 22 years, **the filling of 160 new medium-sized landfills was avoided\***

\*the estimate of avoided landfills was calculated by considering for each commodity fraction an apparent density figure from ERICA source with a specific degree of compaction, assuming that the average capacity of a landfill is equal to 1Mcm.

Source: Sustainable Development Foundation estimate

## SOCIO-ECONOMIC REPERCUSSIONS

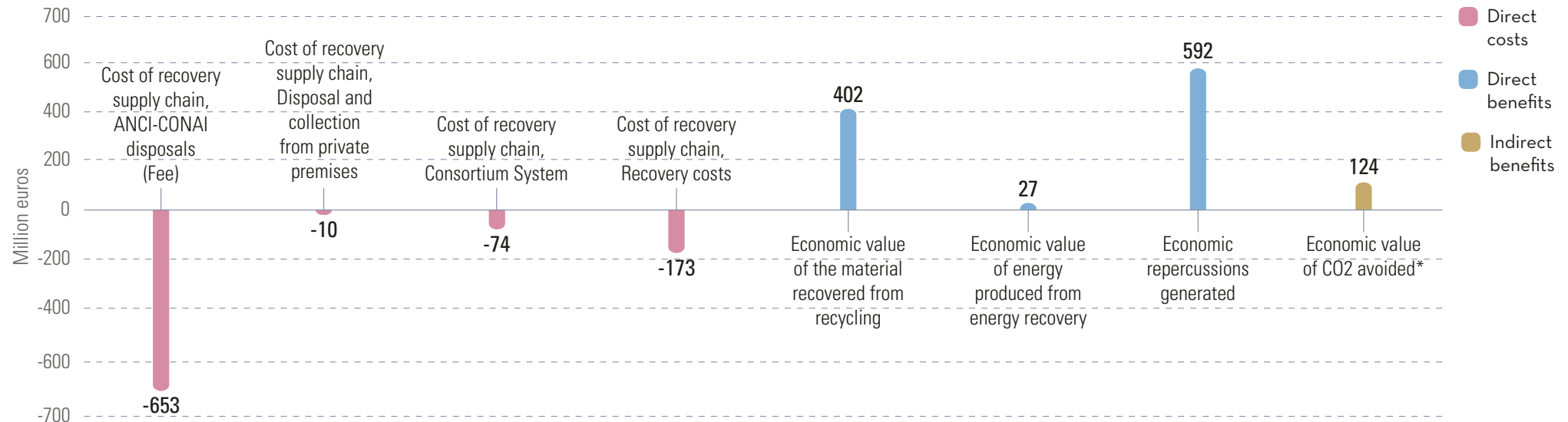
The direct costs of the CONAI recovery chain amounted to 910 million euros in 2019 and it is possible to estimate that from 2005 to 2018, the latter incurred total costs of 7 billion euros, including fees paid to Municipalities, costs of delivery and collection from private premises, costs of recovery calculated based on the costs of sending for recycling, energy recovery and other forms of delivery and revenues from the sale of materials, as well as operating costs of the CONAI supply chain.

The economic benefits directly associated with the activities carried out within the scope of consortium management, even if they cannot be directly added together due to different accounting perimeters in certain cases, far outweigh these costs and reached one billion euros in 2019, twice as much as in 2005.

58% can be attributed to the economic repercussions generated (calculated on the basis of the numbers and average salaries of those employed in the collection and preparation for recycling of packaging waste), 39% from the economic value of the material recovered from recycling and the remaining 3% from the economic value of the energy produced from energy recovery. The economic value directly generated from 2005 to 2019 by the Consortium packaging waste recovery system totalled more than 11 billion euros.

The indirect benefits, on the other hand, refer to avoided CO<sub>2</sub> and amounted to 124 million euros in 2019 (more than double the value of 2005): from 2005 to 2018 these benefits amounted to more than 1 billion euros in total.

### → Costs and economic benefits of consortium management in 2019



The net balance between revenues and costs is 235 million euros.



\*The indicator is calculated taking into account the lowest economic value indicated in Directive 2009/33.



# CONAI's commitment to prevention





**DESIGN FOR RECYCLING**

**66**

**PREVENTION DOSSIER**

**67**

**CONAI PREVENTION CALL**

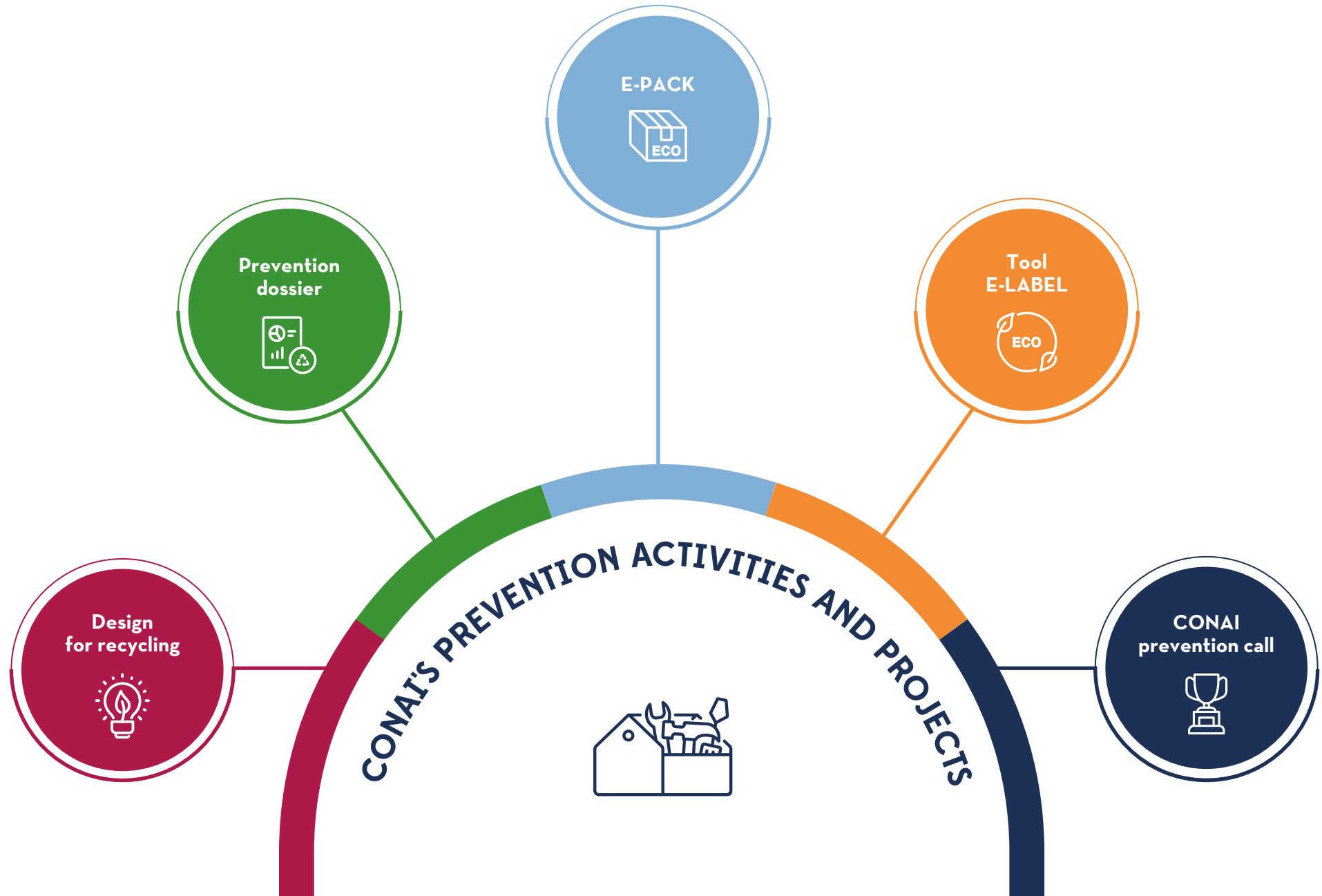
**68**

**E-PACK**

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**E-LABEL TOOL**

**71**





Among the objectives provided for by current legislation, in addition to recycling and recovery of packaging waste, CONAI must engage in “prevention” by promoting actions aimed at increasing the recyclability and reusability of packaging, as well as its reduction. CONAI meets this commitment through the implementation of various initiatives addressed to member companies.

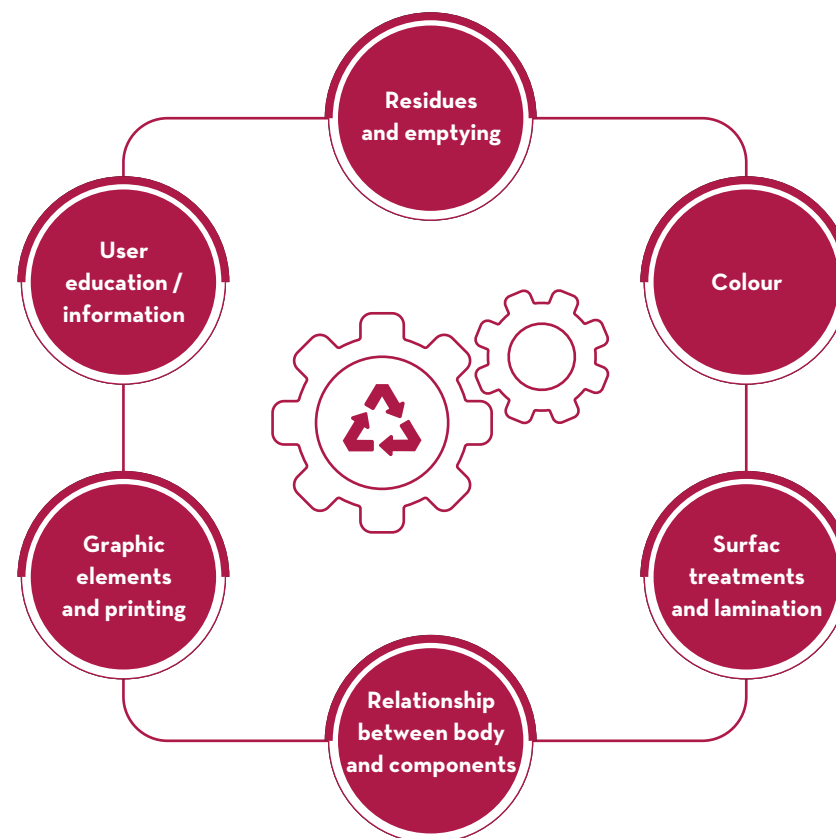
## DESIGN FOR RECYCLING - DESIGN FOR RECYCLING GL

Design for Recycling is the web platform ([www.progettarericiclo.com](http://www.progettarericiclo.com)) on which the “Guidelines to facilitate the recycling of packaging”, implemented by CONAI with the support of packaging supply chain consortia and leading Italian design universities, can be consulted publicly. The purpose of these documents is to provide effective design guidelines in order to increase packaging recyclability, establishing a continuous dialogue on the issues of recycling and design for recycling with the various players in the supply chain. Through the platform, it is in fact possible to leave suggestions, with a view to the continuous updating and improvement of the Guidelines.

During 2020, the currently available Guidelines for the design of plastic and aluminium packaging were joined by those for paper and cardboard packaging.

In addition to the Guidelines, during 2020 the EcoD Tool was made available, a veritable eco-design tool that can be used to carry out the environmental assessment of packaging, allowing improvement actions to be simulated: the EcoD Tool assesses each phase of the packaging life cycle, investigating the three environmental indicators of CO<sub>2</sub> emissions, energy consumption and water consumption; it suggests possible eco-design levers to be applied to packaging to reduce the environmental impact of each phase of the life cycle; it allows the comparison of different packaging re-design simulations to assess their environmental benefits, based on the 3 indicators, and the new CONAI circularity indicator that measures the efficiency of resource consumption along the supply chain.

### → Aspects to be considered in design



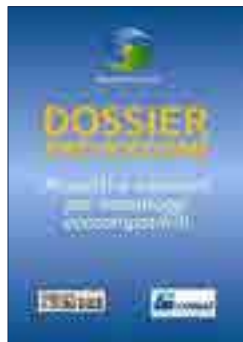
## PREVENTION DOSSIER

Since 2001, every three years, CONAI has been taking stock of the eco-design and sustainability of packaging through the Prevention Dossier. From 2001 to 2013, the Dossier promoted and narrated the eco-design interventions made by companies on their packaging in order to disseminate these good practices. Since 2016, the Dossier has been transformed into the more popularising “Futuro Comune - Innovazione, bellezza e sostenibilità” (Common Future - Innovation, beauty and sustainability) product, written in collaboration with RCS.

The 2019 edition entitled “Pensare Circolare” (Circular Thinking) presents the roadmap for the environmental sustainability of packaging, starting from research carried out by the University of Rome 3 that takes stock of the approach that companies are adopting on this issue, placing the value of packaging back at the heart of the debate and how to increase it through innovation for sustainability.

The story of 20 years of good practices in 7 editions.

More than **500 case studies of ecosustainable packaging** narrated by CONAI and by **more than 280 innovative companies** from 1999 to date.



New publishing product

CONAI defines the roadmap for the environmental sustainability of packaging



## CONAI PREVENTION CALL

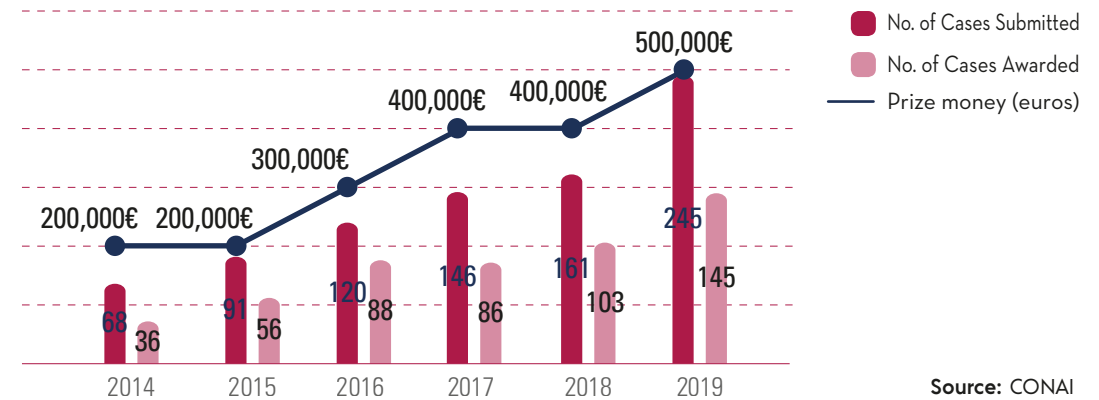
“The CONAI Prevention Call - Promoting the environmental sustainability of packaging”, with the patronage of the Ministry of the Environment, is an initiative which, since 2014, annually makes an award to the most innovative and eco-sustainable packaging solutions implemented by companies. The Call is open to all member companies that have revised their packaging with a view to innovation and environmental sustainability, acting on at least one of the following levers: reuse, facilitation of recycling activities, raw materials saving, use of materials from recycling, logistics optimisation, packaging system simplification and production process optimisation.

Innovations are evaluated by comparing the environmental impacts generated by packaging before and after the intervention through the CONAI Eco Tool, the online tool which, through a simplified LCA analysis, calculates the environmental benefits of preventive actions implemented on packaging, in terms of reduction of CO<sub>2</sub> emissions, energy and water consumption.

Between 2014 and 2019, the number of companies participating in the Call more than tripled, and the number of cases awarded quadrupled. For this reason, the prize money for winning companies has also increased steadily: from 200,000 euros in the first edition to 500,000 euros in the last one. The levers underlying the increased and growing commitment by companies are those of raw material savings (+77 cases compared to 2014) and use of recycled/recovered material (+42 cases compared to 2014).

During the six editions of the Call, the average environmental benefits calculated on the three indicators of the LCC model associated with the eligible cases are equal to a reduction of 22% of CO<sub>2</sub> emissions, 24% of energy consumption and 27% of water consumption.

### Evolution of participation and prize money in the Prevention Call from 2014 to 2019



Source: CONAI

### Average reduction in environmental impacts due to applications of cases admitted to the Call from 2014 to 2019



Source: LCC Tool Conai

## THE POTENTIAL OF PREVENTION

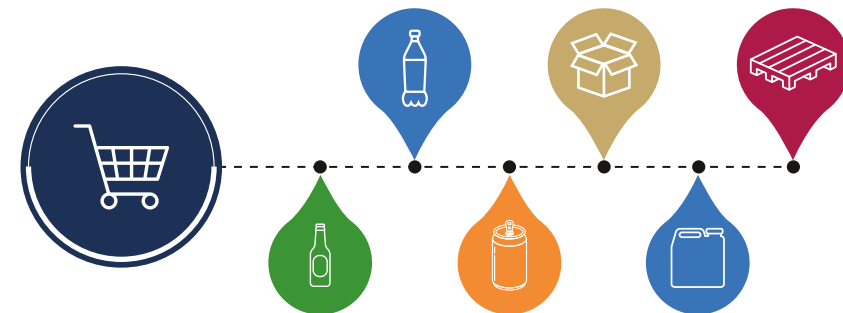
Based on the data and information collected from the last three editions of the “CONAI Prevention Call”, an analysis was carried out to estimate the potential environmental benefits linked to the dissemination of best practices, implemented by packaging producers and users in Italy, in terms of savings in raw materials, water and energy resources and CO2 emissions avoided.

### → The assumptions

The analysis was based on a sample of 120 cases, representative of a “typical basket” of products usually found in the shopping carts of Italians, including primary and secondary/tertiary packaging, on which about 150 eco-design interventions were carried out.

As a basic hypothesis of the analysis, it was assumed that all the packaging of products belonging to the standard basket identified and put on the market in Italy has been subjected to re-design interventions similar to those of the case studies mapped through the “CONAI Prevention Call”.

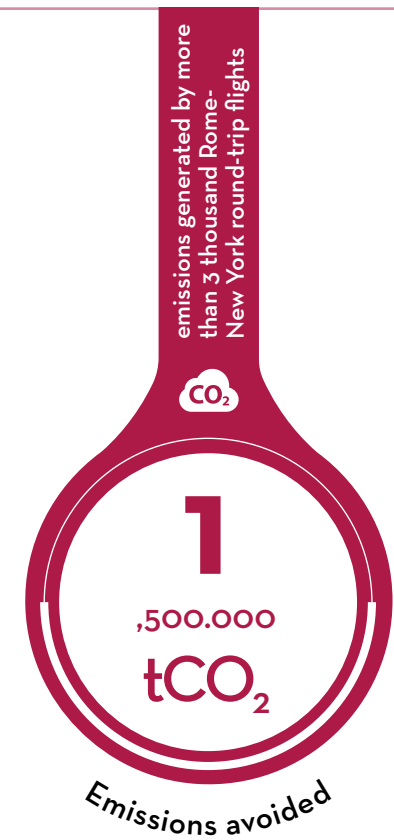
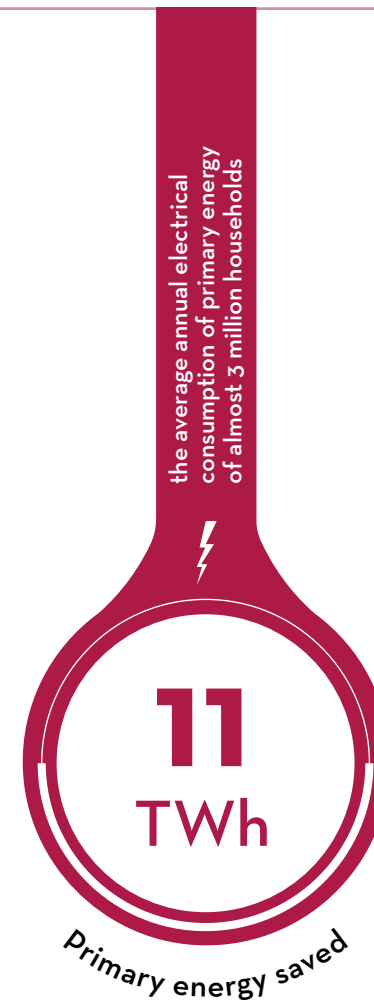
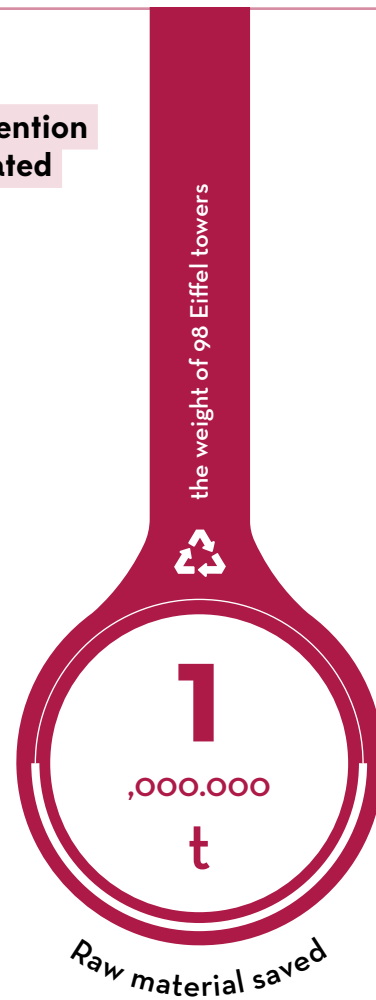
To this end, the number of items sold was estimated for each type of packaging in the basket, based on the analysis of the packaging put on the market by material and by product category for the year 2017.





## THE POTENTIAL OF PREVENTION

→ Environmental  
benefits of prevention  
activities estimated  
by the study

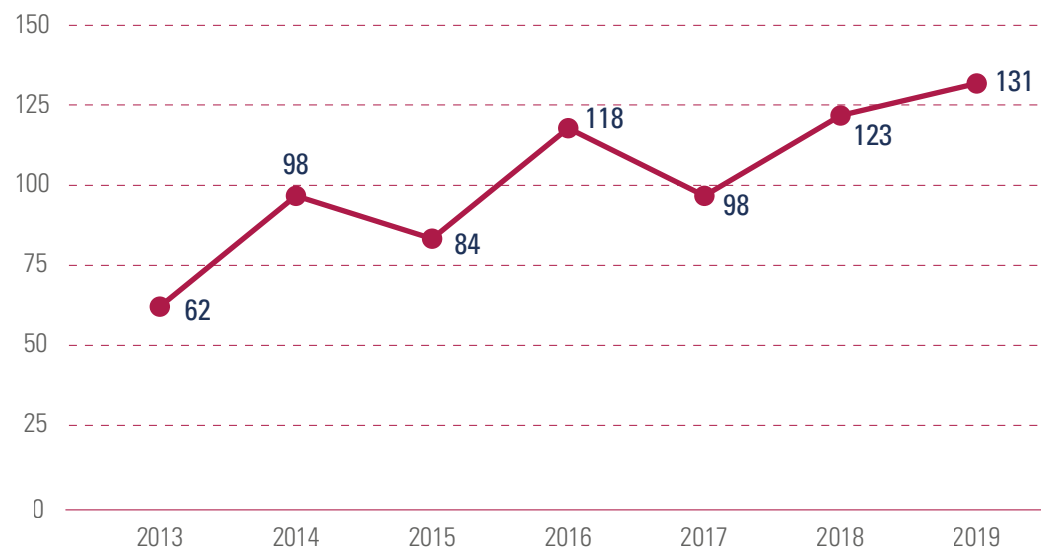


## E-PACK

The online E-PACK service, active since 2013, is aimed at companies that want to improve their performance in terms of design and creation of eco-efficient packaging, acting on all the prevention levers, i.e. the ecodesign actions that companies can adopt to reduce the environmental impact of their packaging throughout its life cycle and that are measured and rewarded through the CONAI Prevention Call. Specific documents made available (on environmental labelling of packaging, guidelines for facilitating packaging recycling activities, promotion of the actions that companies can implement to improve the environmental performance of their packaging in accordance with and in compliance with mandatory provisions, etc.) can be consulted and requests for information on the eco-design of packaging in the various materials can be sent to the following e-mail address: [epack@conai.org](mailto:epack@conai.org).

In 2019, the number of requests addressed to the E-PACK service doubled compared to 2013. The main requests for information have always concerned the labelling of packaging, but in 7 years the requests concerning separate collection and recyclability of packaging have tripled.

→ Number of requests addressed to the e-pack service from 2013 to 2019



Source: Elaboration CONAI

## E-LABEL TOOL

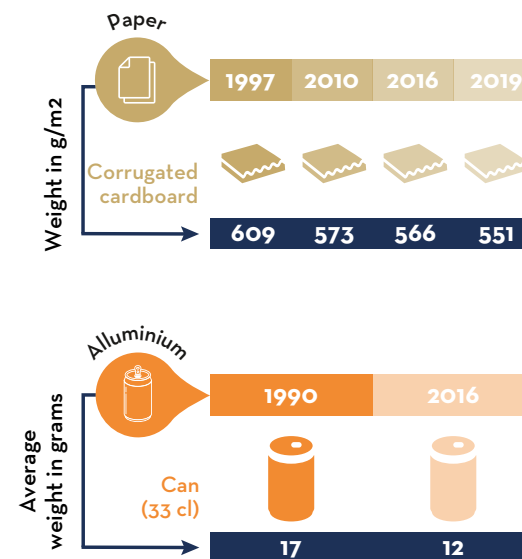
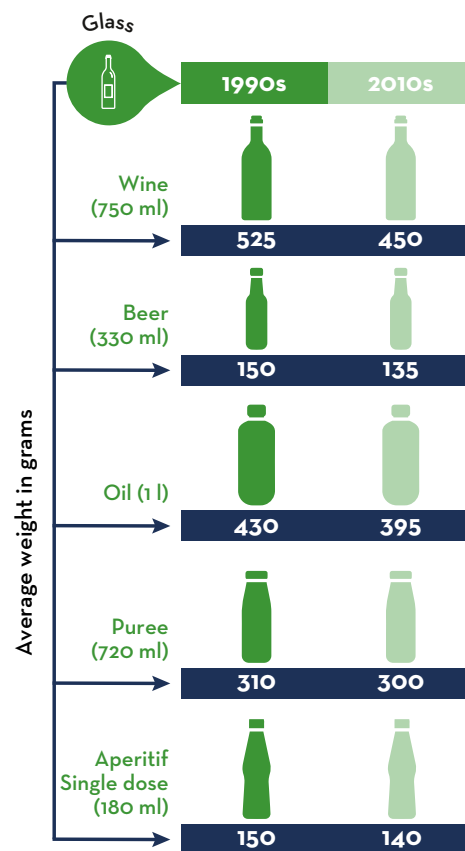
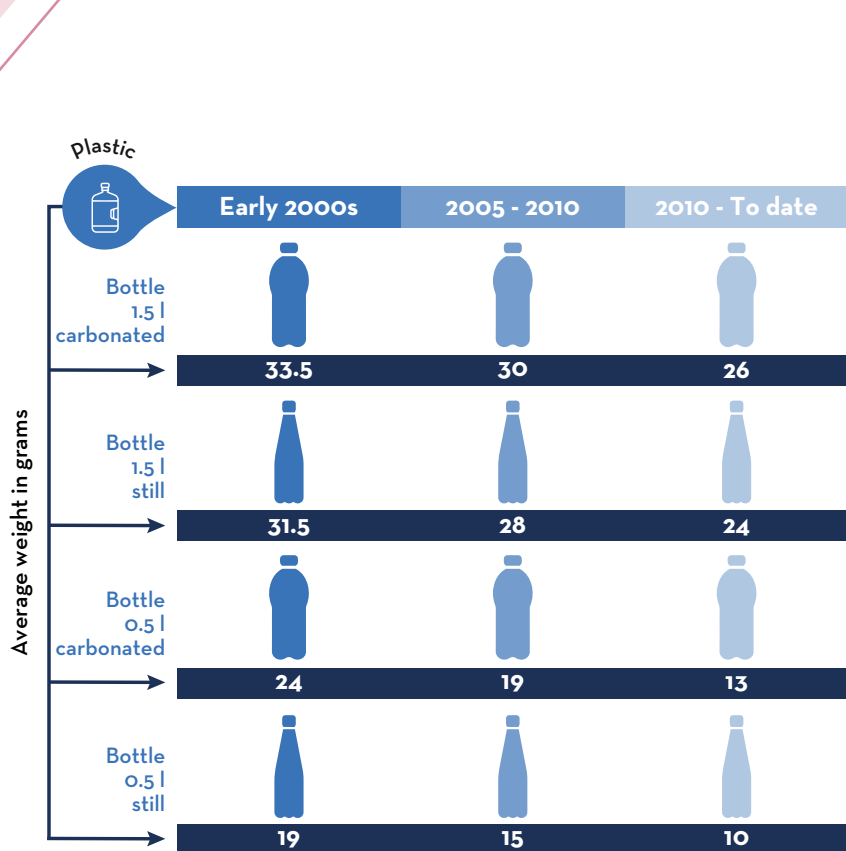


Recent regulatory changes have made environmental labelling compulsory for all packaging put on the market in Italy, leaving room, however, for doubts about interpretation, especially as regards the contents to be shown on the label. In order to ensure a shared interpretation of the new obligations foreseen at the national level, CONAI is working on the preparation of new Guidelines on the subject and has prepared a specific Tool (e-label) available to companies on

the website [e-tichetta.conai.org](http://e-tichetta.conai.org). The Tool aims to guide companies in adopting a correct and homogeneous labelling system, which complies with the legal requirements and is able to provide useful information and indications to end consumers; a support tool and guideline for companies that must comply with the new legal obligations concerning environmental labelling.



## PACKAGING WEIGHT REDUCTION







# ANNEX

## MATERIALITY ANALYSIS

The process for creating the CONAI materiality matrix is divided into 4 phases:

### → 1) IDENTIFICATION OF SIGNIFICANT TOPICS

Created based on:

- a) An analysis of the regulatory provisions regulating CONAI's activity, with reference to its functions and its mandatory objectives of an environmental nature;
- b) An experiential analysis of the problems and expectations of the stakeholders towards the CONAI system, through the evaluation of the experts of the Sustainable Development Foundation and the CONAI technical area;
- c) A benchmark of the material topics present in the materiality matrices of other national waste management consortia and certain Utilities, entities similar to CONAI

### → 2) STAKEHOLDER ENGAGEMENT BY IMPORTANCE OPINION

in terms of the purposes of the activity carried out.

Representatives of all CONAI stakeholder categories (see stakeholder map) were involved in a survey in which they were asked to express their opinion on the importance of each topic identified, attributing a score between 0 and 6, with the possibility of indicating additional topics of interest.

### → 3) CONSTRUCTION OF THE MATRIX

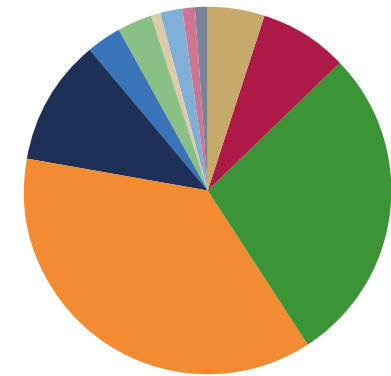
On the basis of the results obtained from the survey, the topics were placed in a two-dimensional matrix in which the horizontal axis represents the "importance for CONAI" (members of the Board of Directors) and the vertical axis the "importance for other stakeholders". The coordinates were defined by allocating each topic an average score on the basis of the opinions expressed by stakeholders then subjected to a prioritisation whose influencing factor was: the frequency with which stakeholders voted for the 5 topics that were the most significant for them among the 15 topics analysed.

### → 4) VALIDATION OF THE MATERIALITY MATRIX

The matrix of topics was submitted to the President and the Director of CONAI who gave their contribution to the analysis by expressing an opinion on the topics and approving the final matrix.

**147 entities from different stakeholder categories took part in the survey.**

### → Breakdown by type of stakeholder taking part in the survey



- Board members
- Institutions
- Utilities
- National waste management consortia
- Media
- Consulting companies
- Universities, research institutions, observatories
- Trade associations
- Consortium members
- Employees
- Packaging Supply Chain Consortia



## GENERAL DISCLOSURE (GRI 102)

	Disclosure	Page
<b>Organisation profile</b>		
<b>102-1</b>	Organisation name	National Packaging Consortium (CONAI)
<b>102-2</b>	Activities, trademarks, products and services	p. 27, 29, 47
<b>102-3</b>	Headquarters	Via Tomacelli, 132 00186 - Rome
<b>102-4</b>	Place of business	Italy
<b>102-5</b>	Ownership and legal status	p. 27
<b>102-6</b>	Markets served	p. 29, 37, 38, 39
<b>102-7</b>	Organisation size	NB: The scope of the report does not concern the CONAI organisation but the national packaging waste management Consortium System
<b>102-8</b>	Information on employees and other workers	
<b>102-9</b>	Supply chain	
<b>102-10</b>	Significant changes in the organisation and its supply chain	There were no changes in 2019 compared to the previous year
<b>102-11</b>	Precautionary principle	p. 30

## GENERAL DISCLOSURE (GRI 102)

	Disclosure	Page
<b>102-12</b>	External initiatives	p. 31
<b>102-13</b>	Association membership	p. 31
<b>Strategy</b>		
<b>102-14</b>	Statement from a senior executive	p. 2
<b>Ethics and integrity</b>		
<b>102-16</b>	Values, principles, standards and rules of conduct	p. 30
<b>Governance</b>		
<b>102-18</b>	Governance structure	p. 30
<b>Stakeholder involvement</b>		
<b>102-40</b>	List of stakeholder groups	p. 31
<b>102-41</b>	Collective bargaining agreements	NB: The scope of the report does not concern the CONAI organisation but the national packaging waste management Consortium System



**GENERAL DISCLOSURE (GRI 102)**

	Disclosure	Page
<b>102-42</b>	Stakeholder identification and selection	p. 31
<b>102-43</b>	Stakeholder involvement methods	p. 31, 73
<b>102-44</b>	Key topics and problems raised	p. 6
<b>Reporting practices</b>		
<b>102-45</b>	Entities included in the consolidated financial statements	The document analyses the environmental and socio-economic performance of the CONAI and packaging supply chain Consortia system (as per the statutory financial statements)
<b>102-46</b>	Definition of report content and topic perimeters	p. 5, 6
<b>102-47</b>	List of material topics	p. 6
<b>102-48</b>	Revision of information	There have been no revisions to published data compared to the 2018 report

**GENERAL DISCLOSURE (GRI 102)**

	Disclosure	Page
<b>102-49</b>	Reporting changes	First report prepared according to GRI's referenced claim option
<b>102-50</b>	Reporting period	2019
<b>102-51</b>	Date of most recent report	p. 5
<b>102-52</b>	Reporting frequency	p. 5
<b>102-53</b>	Contacts for requesting information about the report	p. 79
<b>102-54</b>	Statement on reporting in accordance with GRI Standards	p. 5
<b>102-55</b>	GRI content index	p. 75
<b>102-56</b>	External assurance	The report will be submitted to the validation process by a third party to obtain assurance.



**TOPICS - SPECIFIC STANDARD DISCLOSURE**

	Disclosure	Page
<b>TOPIC - Reporting and transparency of economic flows</b>		
<b>103</b>	Management Approach	p. 6, 43
<b>GRI 201 - ECONOMIC PERFORMANCE</b>		
<b>201-1</b>	Economic value directly generated and distributed	p. 43
<b>TOPIC - Support for disadvantaged areas</b>		
<b>103</b>	Management Approach	p. 6, 39, 40, 47
<b>GRI 203 - INDIRECT ECONOMIC IMPACTS</b>		
<b>203-2</b>	Significant indirect economic impacts	p. 39, 40, 53
<b>TOPIC - Promotion of innovation and research</b>		
<b>103</b>	Management Approach	p. 6, 27, 44, 45
<b>TOPIC - Energy consumption reduction</b>		
<b>103</b>	Management Approach	p. 6, 52

**TOPICS - SPECIFIC STANDARD DISCLOSURE**

	Disclosure	Page
<b>TOPIC - Reducing greenhouse gas emissions and combating climate change</b>		
<b>103</b>	Management Approach	p. 6, 52
<b>TOPIC - Direct and indirect economic benefits of packaging recovery</b>		
<b>103</b>	Management Approach	p. 6, 52
<b>TOPIC - Raw material consumption reduction</b>		
<b>103</b>	Management Approach	p. 6, 27, 52
<b>GRI 306 - WASTE</b>		
<b>306-1</b>	Significant impacts related to waste generation	p. 53, 54
<b>TOPIC - Landfill delivery reduction</b>		
<b>103</b>	Management Approach	p. 6, 19, 27
<b>TOPIC - Promotion of preventive approaches in waste production</b>		
<b>103</b>	Management Approach	p. 6, 27, 47, 66



**TOPICS - SPECIFIC STANDARD DISCLOSURE**

	Disclosure	Page
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**TOPIC - Pursuit of national recycling objectives**

<b>103</b>	Management Approach	p. 6, 27, 52
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**GRI 301 - MATERIALS**

<b>301-3</b>	Recovered or regenerated products and related packaging materials	p. 42
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**GRI 306 - WASTE**

<b>306-2</b>	Management of significant waste-related impacts	p. 47
<b>306-4</b>	Waste not sent for disposal	p. 13
<b>306-5</b>	Waste sent for disposal	p. 13

**TOPIC - Support for qualitative and quantitative growth of separate collection**

<b>103</b>	Management Approach	p. 6, 27, 29, 39, 40, 47
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**GRI 413 - LOCAL COMMUNITIES**

<b>413-1</b>	Activities envisaging the involvement of local communities, impact assessments and development programmes	p. 37
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**TOPICS - SPECIFIC STANDARD DISCLOSURE**

	Disclosure	Page
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**TOPIC - Citizen awareness building and education**

<b>103</b>	Management Approach	p. 6, 27, 46
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## CONAI 2019 GREEN ECONOMY REPORT

Curated by the CONAI Consortium

Via Pompeo Litta, 5 20122 Milan

Tel 02-540441

[www.conai.org](http://www.conai.org)

For further information concerning the CONAI GER 2019,  
please contact Fabio Tognocchi [tognocchi@conai.org](mailto:tognocchi@conai.org)

With the technical support of the



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SOSTENIBILE

Sustainable Development Foundation

Working group: Andrea Barbabella (coordinator) and Alessia Albani

[www.fondazionevilupposostenibile.org](http://www.fondazionevilupposostenibile.org)

Graphic design and layout: Bebung





The Green Economy Report® is the tool chosen by the CONAI Consortium in order to report on and communicate its performance in terms of sustainability and commitment to the environment. The document, drafted in compliance with the main international standards, has been developed following the original assessment and reporting methodology developed by the Foundation for Sustainable Development in order to respond to the needs of organisations engaged in the green economy.

