

**General
Programme for
the Prevention
and
Management of
Packaging and
Packaging Waste**

**Final General Report
2021**

June 2022

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This publication consists of two documents:

- The *Final General Report*, which gives an account of the activities and the results achieved in 2021 – in particular by CONAI and Packaging Material Consortia, and reports the contribution by the Self-compliance EPR organizations;
- The *General Programme for the Prevention and Management of Packaging and Packaging Waste* which, as stipulated by the legislation in force (Article 225 of the Consolidated Environmental Act [TUA]), outlines the lines of intervention and the objectives for the next five-year period (2022–2026), based on the contents of the institutional documents of the Packaging Material Consortia and the Self-compliance EPR organizations.

APPROACH TO THE GENERAL PROGRAMME FOR THE PREVENTION AND MANAGEMENT OF PACKAGING AND PACKAGING WASTE

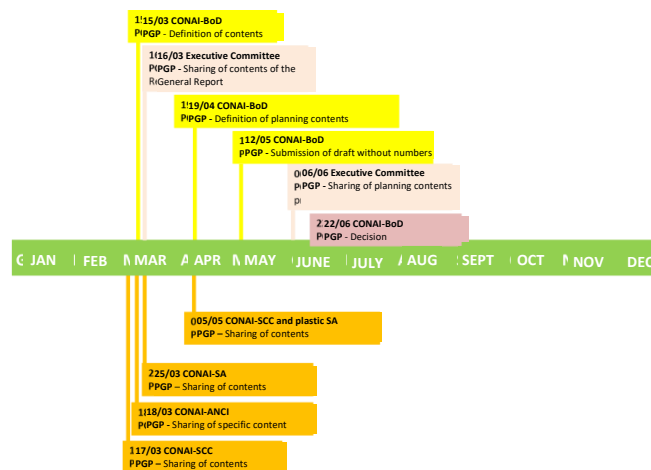
In 2022, an approach was initiated for the first time to the sharing of the contents of this document with the main stakeholders involved in the management of packaging waste.

Against a backdrop of intense economic uncertainty due to the effects of the war in Ukraine, and also characterised by regulatory developments with significant impact on both the management of packaging and packaging waste and on the reporting of information regarding the management of packaging and packaging waste, CONAI has deemed it appropriate to involve the main parties in an approach to sharing and defining contents of the document, without prejudice to the provisions of Article 225 of the TUA.

From the middle of March 2022, eight meetings took place involving the CONAI organization and the following individuals:

- Members of CONAI’s Board of Directors
- Executive Committee;
- Packaging Material Consortia;
- Self-compliance EPR organizations;
- National Association of Italian Municipalities (ANCI).

All parties contributed on the areas for which they are responsible, to enriching the contents of the documents which will include some details and insights into specific aspects deemed necessary to explain certain phenomena and data.



Executive Summary

This General Programme is the result of significantly more intense work compared with previous occasions. Not only is it the richest document of the year in terms of data and information, but it is also a timely report – on both the 2021 results and the lines of intervention for the next few years – resulting from an approach that gathered together insights and ideas through discussions with all CONAI stakeholders (8 meetings).

The context in which CONAI finds itself operating has changed radically. Today, the booming costs of virgin raw materials, the energy crisis, the developments in the EU packaging directive and the new phase of urban waste management ready to start with the National Waste Management Programme impact deeply on both the context and the possibility of planning future activities.

We should probably start with the socio-economic data. 2021 has been marked by a strong resumption in consumption, during a pandemic situation that continued but relaxed its grip. The release of packaging onto the market increased by 8.5% compared with 2020, exceeding 14 million tonnes.

An upsurge that did not put a strain on the recycling chain. 73.3% of packaging was given a second life in 2021: 10 million, 550 thousand tonnes – up 9.3% from the previous year.

An outcome achieved by 50% thanks to the work of the Packaging Material Consortia in the CONAI system (a figure that is down by 2 percentage points compared with that of 2020; in other words, a year characterised by a strain on the market, which the EPR organization has borne as is its nature); for 48%, thanks to independent recyclers (in 2020, the percentage was 46%; the recovery of the market obviously led to its growth); for the remaining 2%, thanks to the work of Self-compliance EPR organizations (which for the plastic packaging chain represent 16% of recycling).

Recycling that is ever more at national level (90% of the quantity is recycled in Italy): the percentages of packaging waste sent to recycling outside Italy went down (-30%).

If we add the energy recovery figures to recycling ones, the numbers rise: in Italy over 82% of packaging avoided landfill in 2021.

A scenario in which awareness of the new Eurostat methods of calculation is not undermined, and which, in view of the European recycling objectives from 2025 to 2030, will lead us in a few years to report data differently. There have been plenty of discussions of this with the Packaging Material Consortia, with the Self-compliance EPR organizations and with ISPRA (the Italian Institute for Environmental Protection and Research), which we will pursue in the coming months.

A discussion that, in the drafting of this Programme, led us to reason on a kind of double track: that of calculation performed with the current method and that – in advance and forward-looking – of calculation performed as though it were already 2025.

It is clear that the greatest impact of the new reporting procedures provides especially for the plastic packaging chain, so the calculation point was moved further downstream, i.e. within the recycling plant and not at the entrance.

The positive point is that, even if we were to calculate the results today with the method that will be required in three years' time, the percentage of recycling will go down only by one percentage point, (at around 72%).

Added to these considerations is a small point of pride for the system: for the first time in the General Programme we can add reporting for compostable bioplastic packaging, the responsibility of the Biorepack consortium, which began to take its first steps between the end of 2020 and the beginning of 2021.

Data at national level could not achieve the results that CONAI presents were it not for CONAI's national framework agreement with ANCI, which allows the flow from urban waste collection to be intercepted, or for a network of regeneration, repair and recycling platforms, which cover commercial and industrial packaging, in agreement with the Packaging Material Consortia.

The amounts managed under agreement with ANCI in 2021 continued to grow, albeit at a less sustained rate than the past (a decline that continued in the first few months of 2022), a direct consequence of a favourable market situation.

7,583 Italian Municipalities entered into at least one agreement with the CONAI EPR organization, with a population segment of 98% served.

To cover additional costs incurred by the Municipalities in separate waste collection in 2021, CONAI granted 727 million Euros to Italian local authorities. 445 million were instead allocated to the financing of processing, recycling and recovery activities.

However, aside from the collection and recovery activities, the Programme also details the other activities carried out by the Consortium, from prevention to eco-design, from supporting local organizations lagging with special projects dedicated to the Italian southern regions and resources for the National Recovery and Resilience Plan, to training and international study and research.

Looking to the future, between the lines of intervention by CONAI, the Programme confirms the commitment to leading-edge activities such as modulating and revising the environmental contributions as the market situation evolves.

We could not fail to give an account of the activities related to the new features of the ANCI-CONAI Framework Agreement, such as the third-party call for tender and the adjustment path towards the new Framework Agreement. A topic that must also touch on the determination of efficient costs of separate collection and an interaction in this regard with the Italian Regulatory Authority for Energy, Networks and Environment (ARERA).

The account of the numerous extraordinary projects (digital recycling stations, guidelines for both waste management in ports and for the sustainability of events...) and surveys functional to the promotion of the market for second raw materials is added to the issue of achieving the packaging targets imposed by the Single-Use Plastic Directive, for which CONAI is the guarantor for Italy.

The hot topic, as it is easy to imagine, is mainly related to the targets for collection of PET beverage bottles. CONAI estimates that to date it has collected 69% of them. The SUP requests 77% by 2025 and 90% by 2029. Although the country is ready to achieve the first target, achieving the second will take some effort. The CONAI EPR organization has proposed a model of selective collection as a solution, which can be integrated with the traditional model, involving various infrastructural solutions depending on the context and the local area.

On this issue too, CONAI is ready to promote discussion, coordinating the systems directly affected by the need to achieve these targets.

1.

The Packaging Waste Management System in Italy

Twenty-five years ago, the packaging supply chain was among the first to be regulated at European level, with an approach that we can now define as an ante litteram circular economy.

The national reference standard, which is derived from the European packaging and packaging waste directives (Directive 1994/62/EC, updated by Directive 2004/12/EC and today by the Circular Economy Package Directives 2018/851/EC and 2018/252/EC), is Legislative Decree 152/2006 as amended, known as the Consolidated Environmental Act (hereinafter TUA).

The domestic regulatory environment has been affected by important changes, brought about by the enactment of Community directives. Nevertheless, the two key principles of the management model have remained unchanged:

- **extended producer responsibility**, in accordance with the “*polluter pays*” principle, establishes producers and users as responsible for the “*correct and effective environmental management of packaging and packaging waste generated by the consumption of their products*” (Article 221). It is the responsibility of the “*producer*” to pursue the ultimate goals of recycling and recovery established by the legislation in force.

Packaging waste objectives laid down in the standard

PACKAGING WASTE OBJECTIVES LAID DOWN IN THE STANDARD		2002 objectives	2008 objectives	2025 objectives	2030 objectives
TOTAL RECOVERY		50%	60%	-	-
Total recycling		25%-45%	55%-80%	65%	70%
RECYCLING BY MATERIAL	Paper	15%	60%	75%	85%
	Wood	15%	35%	25%	30%
	Steel	15%	50%	70%	80%
	Aluminium	15%	50%	50%	60%
	Plastic	15%	26%	50%	55%
	Glass	15%	60%	70%	75%

- **shared responsibility**, i.e. cooperation between all economic operators involved in the management of packaging waste, both public and private.

1.1 CONAI, Packaging Material Consortia and Self-compliance EPR organizations

CONAI is the private, non-profit consortium that is the joint expression of producers and users of packaging, pivotal to the national packaging management system – which, with around 736,000 members, ensures the achievement of national recycling and recovery targets, intervening where the market falls short.

CONAI has been entrusted with significant duties by law in the field of environmental issues.



CONAI is tasked with implementing extended producer responsibility, being called upon to take charge collectively of the costs for correct end-of-life management of packaging placed on the market within Italy, and it is for this reason that the value of the CONAI environmental contribution has been set by the Consortium according to the material in question and the weight of the packaging, and modulated according to specific criteria (reusability and recyclability). In fact, the regulation assigns CONAI with the task of distributing between consortium members (producers and users) “*compensation for costs*” relating “*to separate waste collection services, transport, sorting and other preliminary operations, [...] as well as the costs of recycling or recovery of packaging waste disposed of in the separate collection. [...].*” The necessary means are derived from the definition and collection of the CONAI environmental contribution used “*on a priority basis for the collection of primary packaging or otherwise disposed of to the public service*”.

With reference to operations in packaging waste management, CONAI directs the activity of the 7 Packaging Material Consortia representative of the materials used to produce packaging:



The Packaging Material Consortia are also private and non-profit, and operate the collection and recycling/recovery throughout the country of packaging waste in the different materials, subsidiary to the market.

CONAI is also entrusted with general duties, including the drafting of the *General Programme for the Prevention and Management of Packaging and Packaging Waste*, liaison and coordination between public administrations, Packaging Material Consortia and other economic operators, as well as carrying out information campaigns and the collection and submission of recycling and recovery data to the competent authorities.

The law also provides packaging manufacturers with alternatives to joining the Packaging Material Consortia. In fact, they can “organise the management of their own packaging waste independently throughout the country” (Article 221, paragraph 3, letter a) or set up “a system for the return of their own packaging” (Article 221, paragraph 3, letter c). To date there are 3 Self-compliance EPR organizations that come under the plastic packaging recovery chain.



P.A.R.I., (Plan for the Autonomous Management of Packaging Waste), a self-compliance EPR Organization developed by Aliplast S.p.A. for managing its own flexible packaging waste in PE, attributable to the Commercial and Industrial circuit.



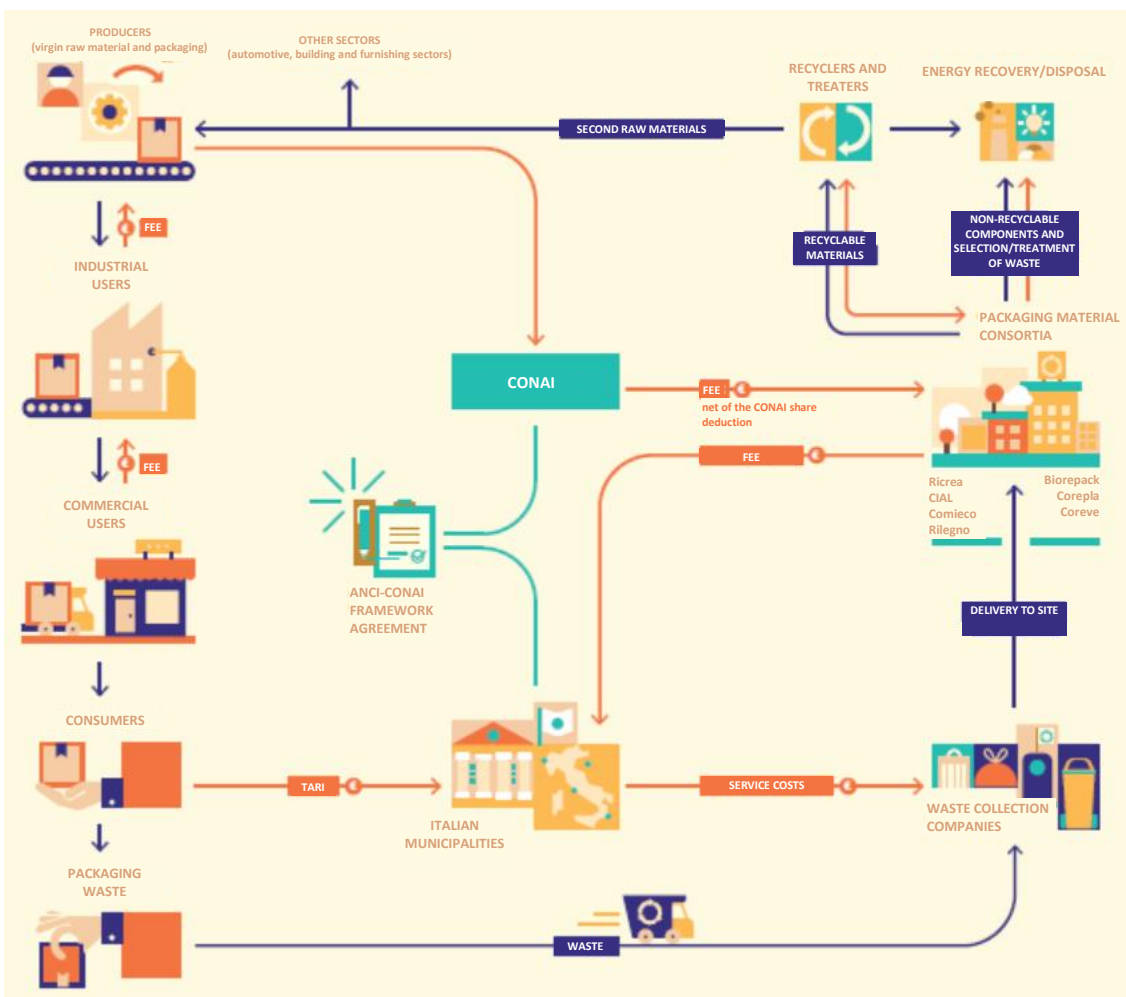
CONIP, the National Consortium of Plastic Packaging, which organises, guarantees and promotes the collection and recycling of the plastic boxes and pallets of its own consortium members at the end of the life cycle.



CORIPET, a system concerned with the management of PET packaging for liquid foodstuffs.

Pursuant to current regulations, CONAI and the Self-compliance EPR organizations promote a national framework programme agreement with the National Association of Italian Municipalities (ANCI) and the Union of Italian Provinces (UPI) or with the management bodies of the appropriate geographical area, in order to ensure the coverage of the costs arising from the separate collection service, transport, sorting and other preliminary operations for packaging waste, as well as the means of collecting the waste itself for recycling and recovery.

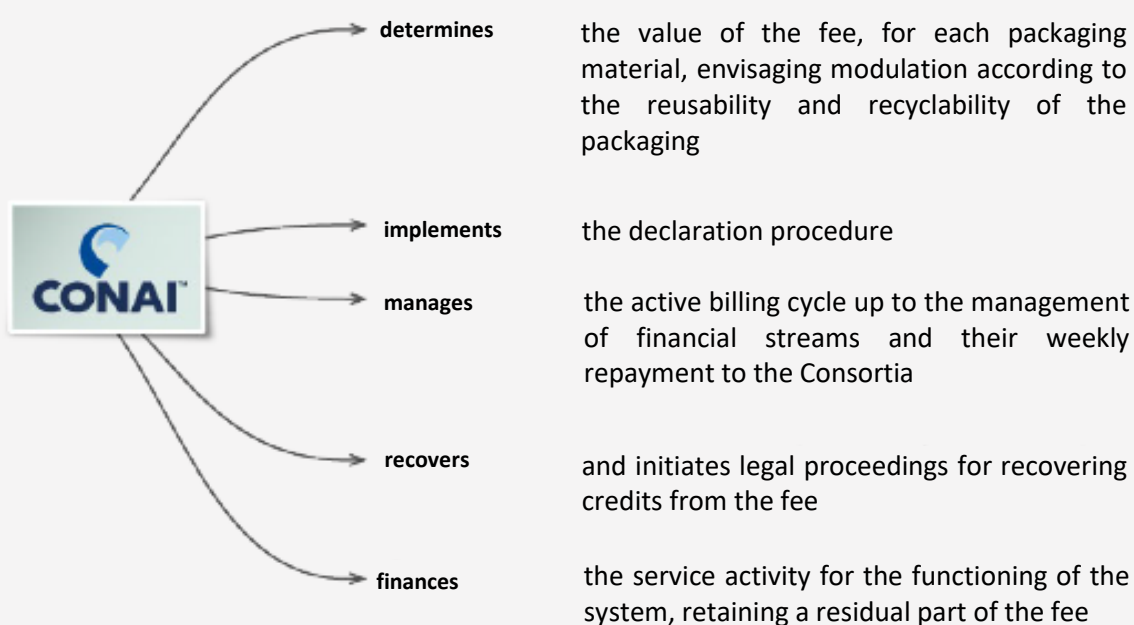
The programme agreement is made up of a general part and relevant technical annexes for each packaging material and is signed by the Packaging Material Consortia and by the sorting facility.



CONAI ENVIRONMENTAL CONTRIBUTION (CAC)

For each type of packaging material, CONAI determines and “*applies to the consortium members [...] the fee known as the CONAI Environmental Contribution*” (Article 224, paragraph 3, letter h) of the TUA as amended), which is the main form of financing with which the relevant costs relating to the separate collection, recovery and recycling of packaging are shared between member manufacturers and users.

In addition to determining the unit value, which is applied on “first transfer”, CONAI deals with the entire consequent management: from the definition and implementation of the declaration procedures, to the decision to modulate it according to the reusability and recyclability of the packaging falling within the same material chain, to the settlement of any disputes for credits accrued. Activities carried out on behalf of Packaging Material Consortia, as defined in the agreements between CONAI and the Packaging Material Consortia.



To finance these service activities for the functioning of the system CONAI retains a residual part of the environmental contribution (2.3% in 2021, which would decrease to 1% if compared to the total revenue of the consortia).

The environmental contribution represents the main revenue for the Packaging Material Consortia. The unit value is set by CONAI’s Board of Directors, which includes producers and users of packaging in various materials, to ensure the economic and financial balance in the Packaging Material Consortia and their cost-effective and transparent operation.

The choice of the value of the environmental contribution is in fact made according to the trends of the other cost and revenue items of the individual Packaging Material Consortia. Costs broadly related to ANCI-CONAI remunerations that the Consortia pay to the Municipalities/Contracted operators according to the Technical Annexes to the ANCI-CONAI Framework Agreement, which represent about 60% of the overall costs of the scheme, and to which the additional costs for sorting/processing prior to recycling and recovery are added, as well as any charges for recycling/recovery; revenue linked to the environmental contribution itself forwarded by CONAI and, to a lesser extent, proceeds from the transfer of collected and recycled packaging waste, subject to market volatility.

When determining the environmental contribution, the Board of Directors must necessarily also consider the amount of the Packaging Material Consortia's equity reserves, the value of which tends to coincide with the shareholders' net worth since the value of the Consortium Fund is marginal: when the reserves tend to be exhausted due to reported or reasonably budgeted deficits, the environmental contribution will increase; on the other hand, in the light of increasing reserves due to operating surpluses, the environmental contribution will be revised downwards. CONAI's Board of Directors intervened to regulate the resolutions related to the value of the Consortia's equity reserves, in order to safeguard their operational continuity and guarantee stability on the financial streams destined for the collection and recycling of packaging waste, as well as to avoid unnecessary provisions.

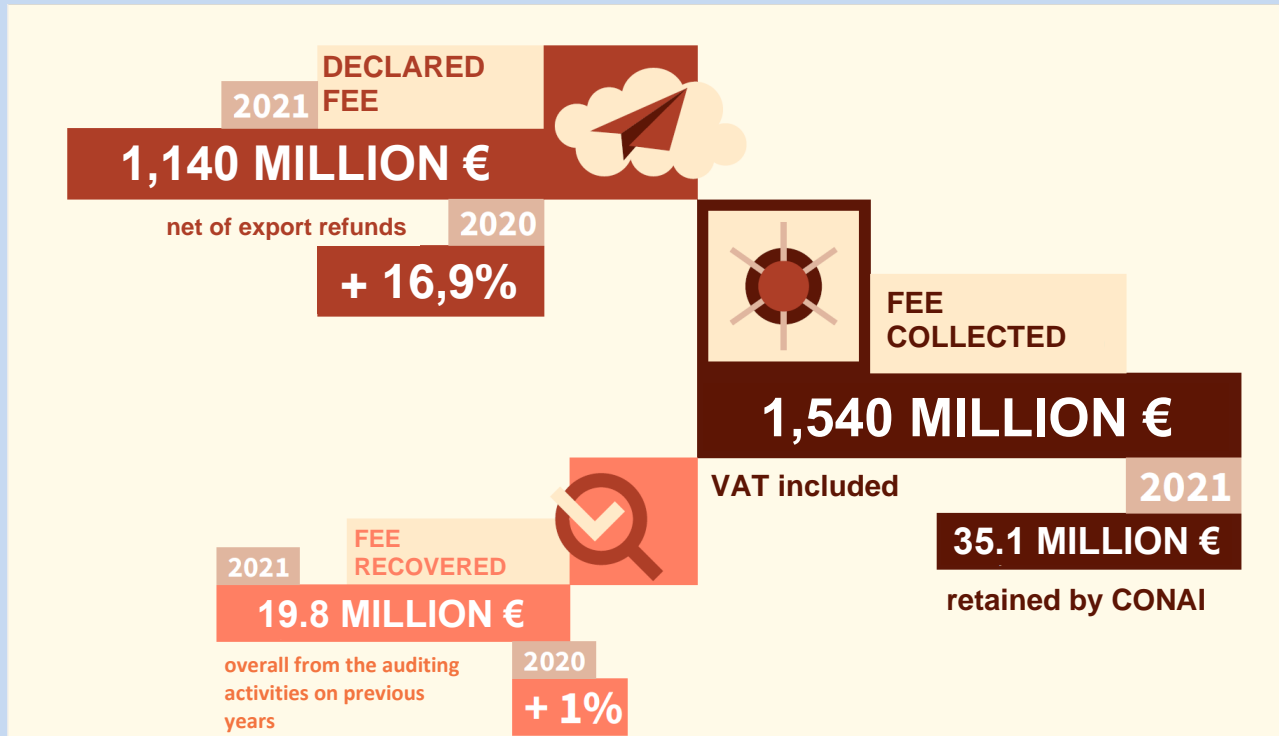
Before submission before the Board of Directors, proposals for changes in the environmental contribution are subject to an investigation by CONAI that also involves representatives from the associations of producers and users of the packaging in question.

Another aspect that should be taken into account in determining the value of the environmental contribution is the time factor. To ensure the influx of the necessary resources for payment of remuneration to Municipalities/contracted operators, the resolutions on the environmental contribution must consider staggering the collection of the contribution itself (as an indication, by 6 months). Where increases in the unit value of the environmental contribution become necessary, consideration is also given to the need to ensure its stability, as a guideline, for several years, for adequate economic-financial planning on the value of the contribution by members. Therefore, in the period following the increase, there are significant operating surpluses and consequent increases in reserves.

Given the many factors to be taken into consideration and the impact that a change in the environmental contribution could have on member companies, the governance chosen so far

means that the decision on the extent of the contribution takes place in a "clearing house of potentially conflicting interests", CONAI's Board of Directors, an expression of producers, users and consumers.

The image below shows the fee stream for 2021.



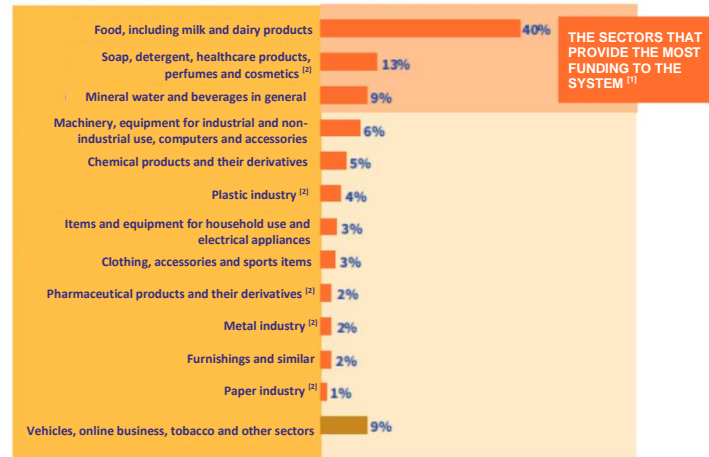
2021 CONAI ENVIRONMENTAL CONTRIBUTION STREAM



The environmental contribution (CAC) is declared to CONAI

- by packaging **producers** and is equivalent to the amount debited explicitly on client user invoices at the time of “first disposal of empty packaging” within Italy.
- by packaging **users** and refers to empty packaging and packaged goods purchased overseas

2021 ESTIMATED FEE INCIDENCE (%) BY INDUSTRY SECTORS



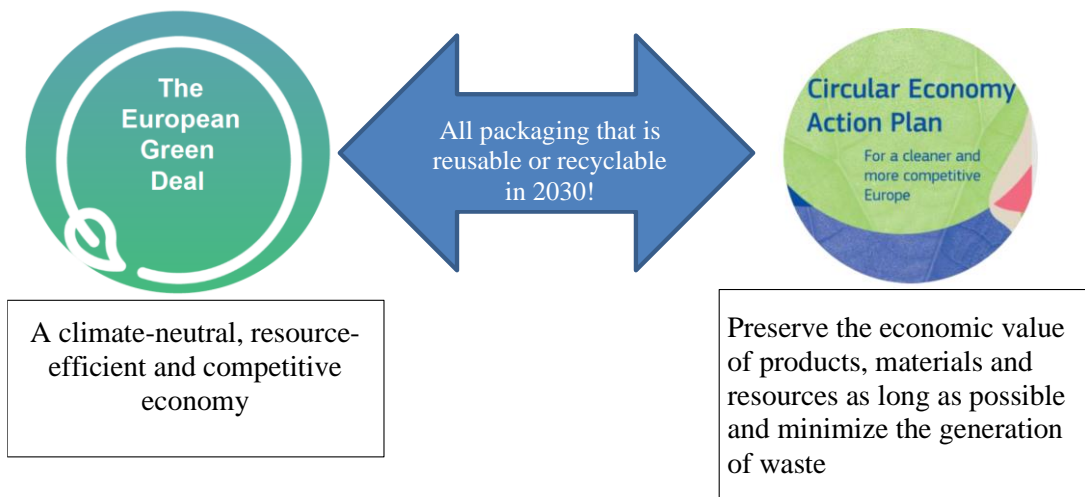
^[1] The fee submitted by packaging users, paid to national packaging suppliers or declared directly to CONAI for import is estimated, grouped by main categories of similar products (Activity-Ateco codes) for the resultant determination of the significance of each category over the total fee declared to CONAI.

^[2] Production and/or commerce.

In light of the tasks assigned to CONAI by the regulation, over 25 years of business the Consortium has intervened on various levels to ensure the objectives are achieved and it has implemented numerous projects, in particular: the ANCI-CONAI Framework Agreement, local projects and the promotion of the eco-design of packaging. These initiatives with reference to 2021 are dealt with in the Final General Report.

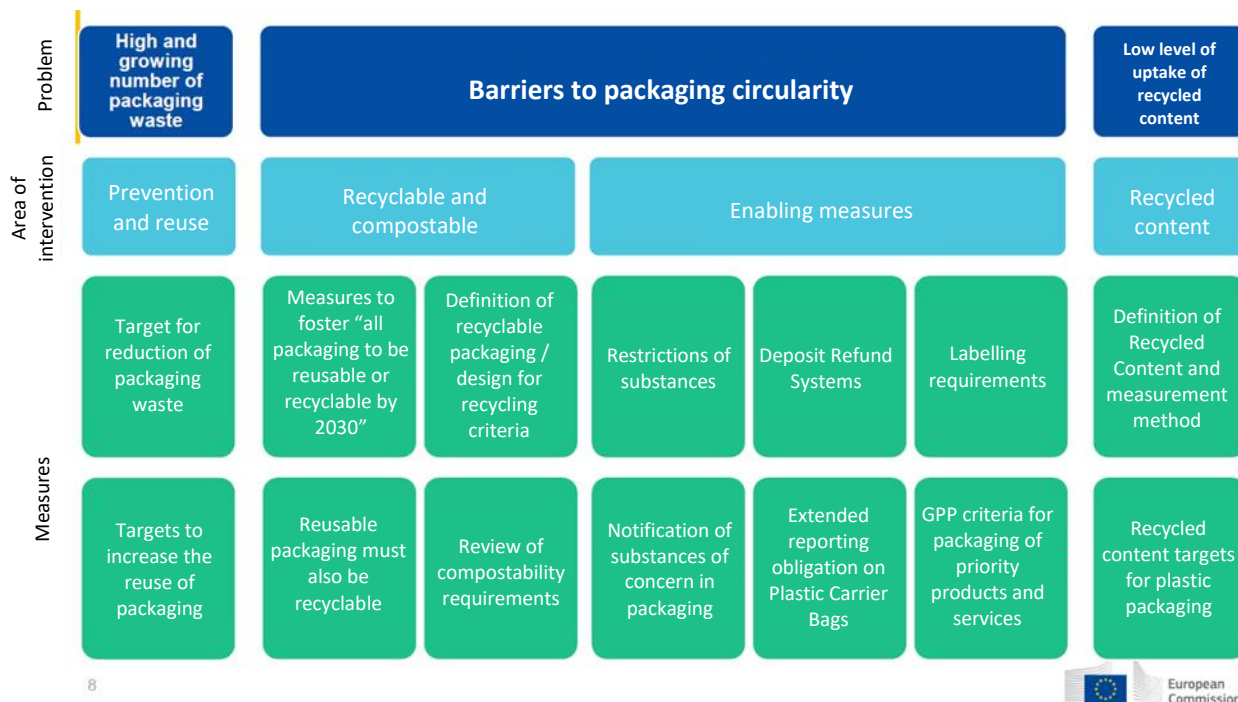
1.2 European Regulations

In 2021, the **European Commission** followed up on the plans set out in the **European Green Deal** launched in 2019, including, in particular, the **New Circular Economy Action Plan** (published in 2020), which aim to achieve climate neutrality by 2050 and the detachment of economic growth from the use of resources, including through specific packaging initiatives.



At the same time, the **European Parliament** announced the adoption of its **non-binding initiative report on the Circular Economy Action Plan**. The report calls for the adoption of clear measures and objectives for waste reduction, the creation of ambitious essential requirements to reduce the use of packaging, as well as measures to incentivise recyclability and the use of recycled content. To encourage the market for second raw materials, MEPs promote an increase in investments in infrastructure for recycling and the creation of nationwide DRSS (Deposit Refund Systems) in each member state. The report also recognises the impact of increased online sales on the circular economy, and MEPs urged the Commission to make sure that online platforms contribute financially to EPR schemes. The report has no binding force, but will aid the Commission in view of the review of the Packaging Directive expected by summer 2022 and the Waste Directive planned for 2023.

In fact, in 2021, despite Member States having just implemented, or some still being in the process of implementing the Packaging Directive modified in 2018, the process was started for another **review of Packaging Directive 94/62/EC** as amended, to strengthen the essential mandatory requirements that packaging must meet before being put on the market and take into consideration other new prevention measures. From the 105 measures identified in more than a year of consultations with stakeholders, the Commission selected 18 for the first impact assessment, grouped into 4 areas of intervention.



CONAI, as well as the Association of European non-profit EPR systems EXPRA (www.expra.eu), have followed and participated in numerous meetings in order to find a synthesis between the purpose of packaging, its sustainability and the feasibility of the ambitious objectives pursued by the EU Commission:

- To put only reusable or recyclable packaging on the market by 2030;
- To reduce the generation of packaging waste;
- To ensure that new packaging contains a certain amount of recycled material;
- To ensure better collection for recycling and reduce internal market barriers.

At the start of 2022, the European Commission appointed consulting company EUNOMIA for a second impact assessment regarding further specific measures that were not finalised in 2021 and were presented to and discussed with a limited number of stakeholders:

- The proposal of two target levels for the **recycled content of plastic packaging**: for packaging sensitive to contact, an "average" target recycled content of 25% and a more ambitious 35% by 2030, up to a target of 50% in 2040; for packaging that is not sensitive to contact, suggested targets are 35% or 45% by 2030, up to 60% in 2040; in addition, for PET bottles, a target of 65% recycled content by 2040 is proposed in addition to the goals set out by the SUP Directive. For these goals, recycled material by mechanical recycling, chemical recycling or with equivalent biobased content is considered (provided that, for the latter, sustainability criteria are met, such as a 30% reduction in greenhouse gases with respect to

the use of fossil fuels) from post-consumer waste (a maximum of 5 percentage points from pre-consumer is permitted). The objectives are in the hands of Italy, with (mandatory) evaluation and reporting in the hands of the “producers” and exemptions are in place for some packaging – cosmetic, some pharmaceuticals – where the plastic component is less than 5% and for those placing marginal amounts on the market, taking as reference the concept of putting below a minimum threshold on the market (e.g. EPR declaration thresholds);

- The proposal of a **definition of qualitative recyclability for all packaging materials** of 95% and “scaled” based on the criteria of population coverage, the member state and the market share of packaging, which must be demonstrated, verified and certified by third parties, based on a negative list of disruptive elements in the recycling process and recycling guidelines.
- Proposals **on the environmental labelling** of packaging to promote its harmonisation and which set out the identification of possible criteria for exemption (e.g. on transport packaging), exceptions (e.g. small packaging), extending informative content not only to management procedures but also to environmental characteristics (e.g. recycled content), and the promotion of digital tools (e.g. QR Codes, EAN). The removal of the alphanumeric code as per Decision 129/97/EC has also been proposed.

In following up on consultations, CONAI has highlighted the importance for the measures proposed to be defined on a scientific basis, and for them to be measurable and implementable, as well as consistent with EU targets such as climate neutrality and digitalisation. Furthermore, on the topic of recyclability, it has highlighted that the determination of unambiguous criteria at European level is welcome, as the current essential requirements already provide for, without prejudice, however, to their necessary application at national level, in order to avoid the risk of innovative technologies developed at national level not being adequately exploited at EU level (e.g. recycling of beverage cartons). One last area of attention is the need to guarantee the continuation of research activities into alternative technologies to those that are known, which would risk being jeopardised if one were to stop at the current picture.

In this second round of consultations too, CONAI has stressed the importance of measures defined based on science, that are measurable and implementable, forward-looking compared to other EU objectives: climate neutrality and digitalisation.

On 30 May 2022, the EU Commission presented the outcomes of the second impact assessment on the review of the Packaging Directive (PPDW) to stakeholders.

The Commission listed the main macro-areas of intervention:

- 1) Prevention and reuse;
- 2) Recyclability;
- 3) Recycled content in plastic packaging;
- 4) Enabling measures.

The Commission then presented its proposals which will concern:

- Objectives to reduce waste by x% per capita by 2030 (baseline 2018);
- The definition and reduction of overpackaging and empty space inside packaging;
- Provisions and minimum requirements for reusable packaging;
- Goals for reuse by specific sectors (hospitality, B2B, etc.);
- The definition of recyclable packaging, criteria of design for recycling;
- The Obligation to be compostable for some types of plastic packaging;
- Objectives for post-consumption recycled content of plastic packaging by 2030 and 2040, established at product level and according to type;
- Provisions on the labelling of packaging (inspired by the Nordic system);
- The minimum requirements for deposit refund systems (DRS);
- The introduction of mandatory minimum criteria for green public procurement for packing products and priority services;
- Updating of the definition of “hazardous substances” in packaging and restrictions on their use.

There is still speculation by the European Commission on transforming the Directive into a Regulation, so as to avoid issues relating to transposition at national level of the member states and reduce possible market distortions.

The Commission has also explained that the targets for reducing waste are to be set by each member state, while the obligation for recycled content will be established at the product level; The legislative proposal, initially planned for 20 July 2022, was postponed to autumn 2022.

In 2021 the European Commission also updated the calendar for **review** of the **Waste Framework Directive**, preparing the relevant roadmap and the initial impact study. Specifically, the review aims to improve the management of waste by reducing both general

waste, through the reuse of products or their components, and mixed waste, through the refinement of separate collection to increase the preparations for the reuse or recycling of waste.

To this end, in the Circular Economy Action Plan (CEAP) the Commission began the specific support studies regarding:

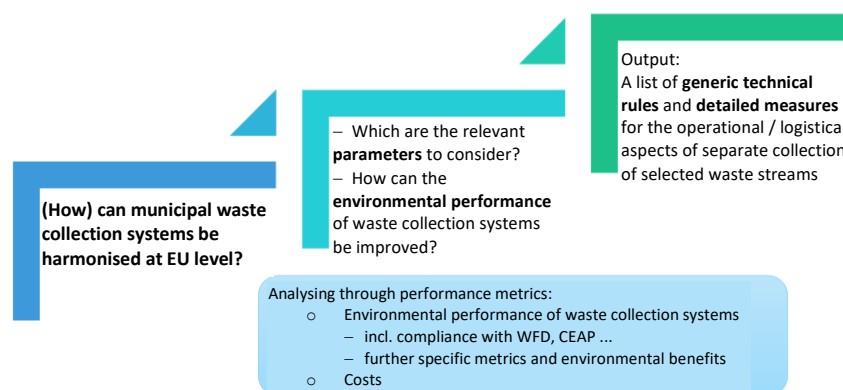
- The introduction of objectives for the prevention of waste for specific waste streams, which it appointed RAMBOLL for;
- The development of a harmonised EU model for separate waste collection, including labelling (on products and on infrastructure), for which it appointed the Joint Research Center;
- The introduction of the EPR for online sales, for which it appointed EUNOMIA.

The review might also update the minimum requirements for the EPR schemes, possibly introducing measures to encourage its harmonisation and to make eco-modulation mandatory. Also, the Commission will assess the possibility of introducing minimum requirements for setting up deposit refund systems (DRS).

CONAI was invited to take part and contribute to the work with regard to:

- 1. feasibility studies on the harmonisation of separate collection systems and identification of a labelling system at EU level** that would facilitate the correct separation of packaging waste at source. At the first meeting, the objectives, methods and work streams were presented.

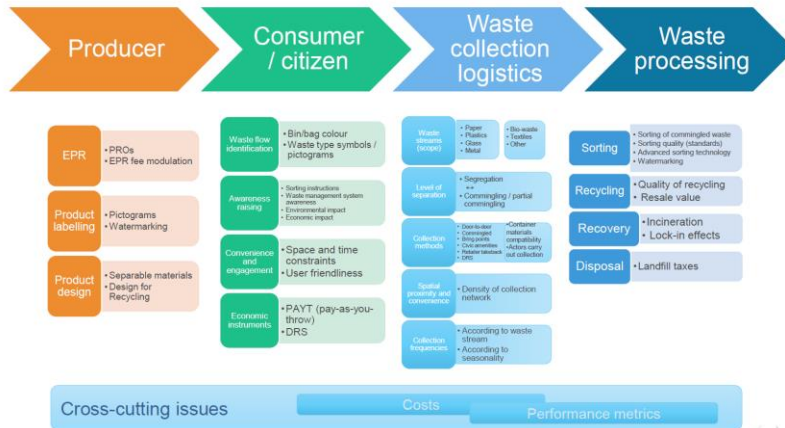
Objectives



Methodology



Work streams



Then thematic working groups were defined – the last one took place in March 2022.

Subgroup №.	0	1	2	3
Label	Cross-cutting / transversal issues	Waste collection logistics	Instruments for dry recyclables	Citizen awareness
Key topics	<ul style="list-style-type: none"> – Comparability of data – Analysis of environmental performance: performance metrics, benchmarking, LCA – Support to cost / benefit analysis of the options identified in the subgroups 	<ul style="list-style-type: none"> – Segregation vs. commingling – Logistics of collection – Bio-waste collection and its systemic impacts – Impact of collection on downstream processing: quality of sorting and recycling 	<ul style="list-style-type: none"> – Identification (e.g. labelling) of products and bins – Collection for reuse/ preparation for reuse – Deposit Refund Schemes (DRS) for reuse and recycling (interoperability and internal market issues of DRS schemes) - Other target streams (beyond paper/ metals/ plastics/ glass + biowaste & textiles, e.g. bulky waste, wood, ceramics,...) 	<ul style="list-style-type: none"> – Awareness raising and citizen engagement – Sorting instructions
Ancillary topics		– Container materials	Operational aspects of Enhanced Producer Responsibility (EPR) schemes	– economic instruments
Typical questions to be discussed / addressed	<ul style="list-style-type: none"> – What are the factors undermining data comparability on waste collection statistics? – What data are available on collection system costs ? 	<ul style="list-style-type: none"> – What constitutes commingling and what (if any) level of commingling is acceptable in the context of separate waste collection? 	<ul style="list-style-type: none"> – Can common specifications be developed for the identification of waste streams? – How can recyclables be captured and processed according to the waste hierarchy? 	<ul style="list-style-type: none"> – What are the most effective / least confusing waste sorting instructions? – How can citizen participation be increased to better separate at source?
Expected outcomes: core issues (proposals for harmonisation) (N.B. tentative / illustrative examples)		<ul style="list-style-type: none"> – Minimum requirements for separate waste collection practices enabling high levels of material recovery – Possible definition and/or recommendation on what can be considered 'acceptable' – commingling of waste 	<ul style="list-style-type: none"> – harmonised product and bin identification – minimum requirements on DRS operation – general guidelines for the collection of recyclable / reusable materials 	<ul style="list-style-type: none"> – user-friendliness of harmonised waste stream identification proposals – minimum requirements on sorting instructions and citizen engagement
Expected outcomes: supporting knowledge	<ul style="list-style-type: none"> – Environmental performance data (LCA, circularity...) – Full cost accounting of waste collection schemes 	– best practices for biowaste separate collection	– best practice on DRS operation	– best practice in awareness raising
links between groups	– prepare analysis of costs/benefits of options		– output to group 3 → : recommendations on product & bin identification	
Inputs sought from the working group	Data on collection schemes and system operation: waste amounts, performance, waste composition, quality, end use (circularity)			
Timeline	October 2021 - Sept. 2022	September 2021 - June 2022	September 2021 - June 2022	December 2021 - June 2022
Expected contribution	<ul style="list-style-type: none"> – Participation in meetings – Provision of data and information 			
Milestones	Meetings (#1/#2/#3)	Meetings (#1/#2/#3)	Meetings (#1/#2/#3)	Meetings (#1/#2/#3)
Deliverables	Input to subgroups Subgroup report	Subgroup report	Subgroup report	Subgroup report

CONAI and EXPRA enriched the severe gaps in the first bibliographic analysis and proposed a harmonised solution at European level based on digital, in line with the national approach to environmental labelling for the collection and recycling of packaging waste, so as to maximise the benefits and objectives set by the legislator and, at the same time, minimise the environmental and economic impacts for the packaging sector, also ensuring the necessary flexibility to address the issue, given the different choices in methods for collection, both between Member States and within individual regions. In particular, CONAI stressed the value of separate collection by families of material as a central tool to obtain quantity and quality of collection for the subsequent recycling of the packaging, emphasising the key role of the Extended Producer Responsibility – EPR – scheme and the close partnership signed through the Agreement with the Public Administration;

2. Guidelines for improving EPR compliance, address free-riding in online sales and define harmonised criteria for modulating EPR fees.

The main aim of the last workshop in March 2022 was to identify different regulatory and technical measures with the aim of improving EPR compliance and to address the issue of free-riding in the case of online sales, marketplaces (OMPs), shipping agents (FSPs) or small quantities (SMEs) within the framework of the EU single market, intra-EU and extra-EU.

In particular, EUNOMIA presented three policy options (A, B and C), depending on their level of action required by the stakeholders involved and the possible effects they could have on free-riding. In addition, measures were presented involving the identification of suspected free-riders together with reinforcement actions.

In this regard, CONAI agreed that the proposed solution 'B', characterised by a medium level of action by the stakeholders involved, was the more feasible option compared to the other two proposed.

Policy Option B: Medium of Level of Action to Achieve Substantial Change

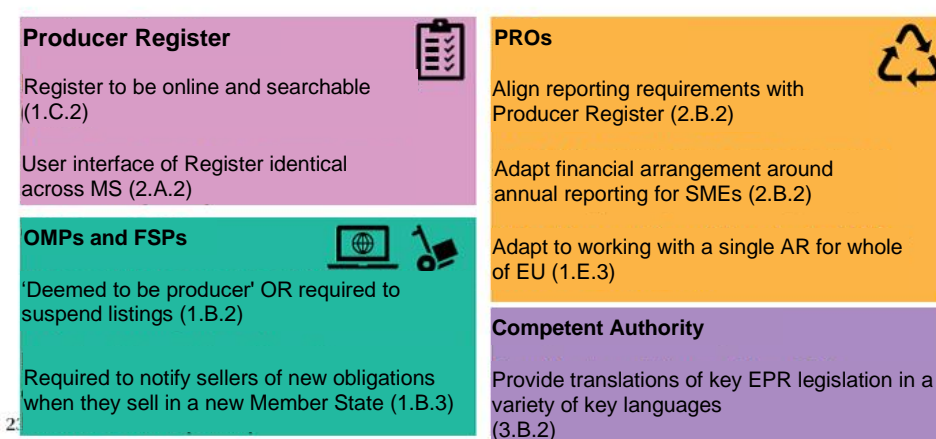
Recommended Actions that the Commission can take

- EU wide EPR information site - with reporting non-compliance procedure (1.C.3)
- Harmonise the frequency of reporting within each EPR product scheme, with different requirements for SMEs and larger companies, and to regulate for the consistent use of reporting subcategories. (2.B.2)
- Minimum Requirements for operating as an AR (1.E.2)
- A single Authorised Representative can represent a producer across the EU for all product types that require this (1.E.3)
- Translations of EU legal documents into key languages (3.B.1)

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B. Actions Needed to Achieve Change



On the other hand, work is still (as of September 2020) outstanding on the chapter of the guidelines regarding the definition of harmonised criteria at EU level for the modulation of EPR fees (environmental contribution) according to the requirements for recyclability, reusability and reparability established by the 2018 Waste Framework Directive.

The issue was taken up and discussed at the Packaging Sustainability Forum held in Brussels on 3 May where CONAI explained the updates on the modulation of its environmental contribution and discussed at what level harmonisation is necessary. From the outset, CONAI has modulated the contribution (for further details, see the dedicated section) already in line with the requirements established by the EU today, therefore, drawing on the experience gained so far, for the purposes of EU harmonisation, CONAI suggests establishing:

- 1) the purposes of the instrument – only to encourage recycling and reuse;

- 2) the metric, only €/t to incentivise reduction;
- 3) a financial criterion for which the value of the fee reflects the net costs (chain deficit) of recycling and recovery;
- 4) transparency of the EPR schemes, publishing the service fees independently from the (net) costs of recycling and recovery.

In 2022 the European Commission published a “call for evidence” aimed at:

- reducing the generation of waste, including through the reuse of products or components;
- reducing unsorted waste, increasing the preparation of waste for reuse or recycling and improving separate collection.

Through the international association EXPRA, CONAI has responded, stressing:

- the strengthening of the current application of the purchase on waste;
- joining the packaging EPR scheme, including reusable packaging;
- the increased involvement of citizens and the role of communication through advertising and educational campaigns;
- the opportunity that any European and national measures in waste management should be commensurate with the resulting CO₂ impact.

A public consultation will be opened in the second quarter of 2022, while the Commission’s proposal is expected for the second quarter of 2023.

In the meantime, the activity related to the delegated acts under the Waste Directive modified in 2018 with the publication of the “Commission Delegated Decision (EU) 2021/6295 supplementing Directive 2008/98/EC of the European Parliament and of the Council with regard to rules for the calculation and verification of the weight of materials or substances which are removed after a sorting operation and which are not subsequently recycled, based on average loss rates for sorted waste”. This decision, however, was objected to at the year-end by the European Council, on the legal basis of a technical and procedural nature. Now the Commission may alternatively:

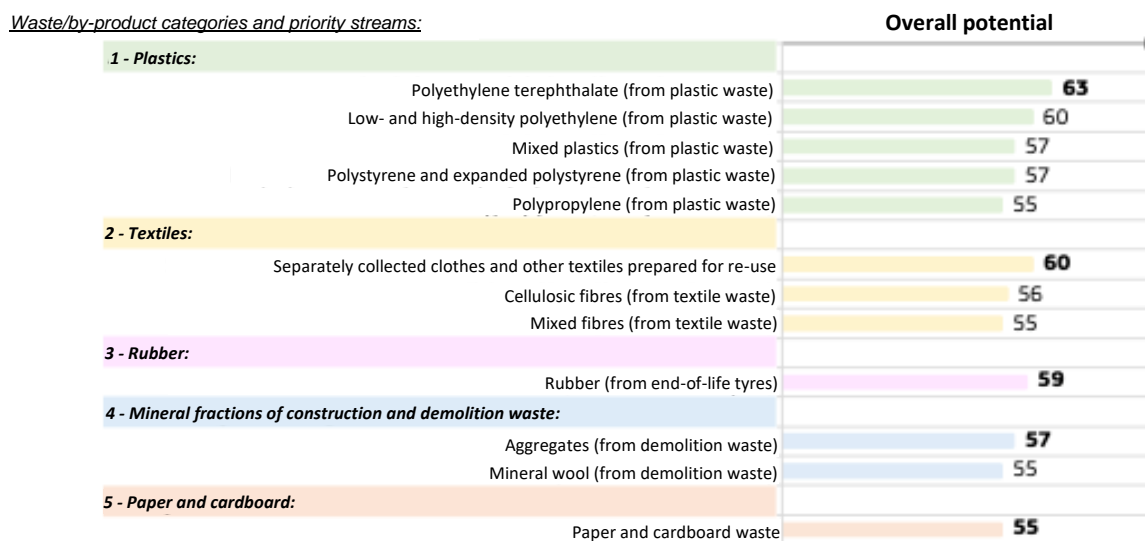
- a) prepare a new delegated act;
- b) present a new legislative proposal to amend the framework act;
- c) take no further action.

This delegated act is of great importance because it should establish the rules and criteria to be followed in determining the actual recycling data calculated by applying the average discards

between sorted and recycled. With regard to national reporting, this act is essential for determining the actual recycling data for plastic packaging.

Corollary to the work on reviewing the Waste Directive, in 2022:

- Joint Research Centre (JRC) and the Directorate-General for Environment of the European Commission, published the final report titled **“Scoping possible further EU-wide end-of-waste and by-product criteria”** in the context of the Circular Economy Action Plan 2.0 with the aim of identifying priority waste streams for which to develop the End of Waste (EoW) status. With 12 ranking criteria and a weighting factor, starting with a pre-set list of waste streams previously shared with parties concerned, they established which waste streams should be the priority target for developing EoW status. The report identifies five priority streams, of which plastic has the highest score, where paper and cardboard are also included.



The European Commission will start working on the EoW criteria for plastic waste in the second quarter of 2022 with the completion of the technical assessment scheduled for the first quarter of 2024.

- The JRC organised a webinar following publication of the EUNOMIA/JRC study “Quality of recycling: towards an operational definition” on the topic of the definition of new as yet unmapped recycling processes and the concept of “quality”. The main objectives of the work fell within two areas:

1. Identification of any recycling processes in which further guidelines are needed to calculate and measure their rate. Special attention was given to chemical recycling as it is recognised by the JRC and considered by industry, that the current EU Implementing Decisions 2019/1004 (for solid urban waste) and 2019/665 (for packaging) cannot be generally applied to this technology. Organic waste and compostable plastic were also given special consideration and attention. The work aims to propose appropriate calculation rules to rectify this situation;
2. Suggestion of relevant approaches to define high-quality recycling, by means of 3 criteria:
 - a) **total potential for substitution** which includes consideration of the extent to which the technical properties of the recycled material are suitable for replacing the primary material in a particular market application;
 - b) **environmental footprint**;
 - c) **long-term use** which considers the time the recycled material is used at each stage of usage and the losses during each recycling stage.

In the context of the above work, CONAI, through EXPRA pointed to both chemical recycling as a solution and the recycling of plastic packaging waste for catalytic usage in the blast furnace metal processing, processes whose quality must be defined predominantly on the basis of potential for substitution.

In 2021 the European Commission published the roadmap and public consultation for the **new political framework on biodegradable, compostable plastics and on bioplastics**. The Commission's aim is to clarify the different characteristics and related handling of waste from biodegradable, compostable plastics and from bioplastics. In this way, the risk of incorrect handling of waste also by consumers will be avoided and companies will be able to have more stability and predictability for their investments, thanks to a clearer legislative framework.

CONAI responded to the consultation by emphasising, based on national experience, the essential role of EPR schemes in encouraging the circular economy also for these types of waste, the policy framework of which should be consistent with and integrated into the new rules and operations of EPR organizations. It was also pointed out that a system for recognising bioplastics is not sufficient if it is not accompanied by an appropriate media campaign for consumers.

In 2022, the European Commission opened a second **public consultation on biological, biodegradable and compostable plastics**, with the aim of determining their political framework and the role they can play in honouring the commitments to the circular economy and carbon emission commitments, in line with the provisions of the European Green Deal and the new Circular Economy Action Plan. In particular, through the questionnaire set up by the Commission and addressed mainly to workers, they wanted to collect opinions on various issues, such as:

- harmonised method to measure biological-based content;
- minimum biological-based content for “bio” products;
- development of sustainability criteria for the virgin raw materials used for biological plastic production;
- restricting the use of biodegradable plastics to specific applications, where outdoor collection is not feasible, or labelling plastic packaging as “compostable”, specifying information on collection and disposal.

Following the feedback received on the questionnaire, which was prepared for the CONAI system by BIOREPACK, the European Commission will arrange a strategic framework and the relevant communication, which is due to be adopted at the end of 2022.

In 2021 the European Commission published the updated version of EU Regulation 2021/1840 concerning **the export of some waste destined for recovery**. The new regulation updates the legislation on the export of waste on the green list to third countries that are not members of the OECD, to which the relevant decision on the control of cross-border movements of waste does not apply.

At the same time, the European Commission also adopted the proposal for the revision of the Waste Shipment Regulation to improve the traceability of intra-EU exchange of waste, stop the export of hazardous waste to third countries and reflect the objectives of the circular economy. In this context, the European Commission launched a public consultation in 2022 in relation to major changes that mainly concern the regulations on shipments of waste to non-OECD countries, the monitoring of shipments to OECD countries, intra-EU shipments and those related to the control of the implementation of legislation.

In 2021 the work of the EU Commission on **delegated acts implementing the SUP Directive 2019/904** continued. Following public consultations and/or discussions with experts the following were published:

- Communication 2021/C 216/01, Commission guidelines on single-use plastic products in accordance with Directive (EU) 2019/904 of the European Parliament on the reduction of the impact of certain plastic products on the environment;
- Decision 2021/1752/EU laying down rules for the application of Directive (EU) 2019/904 of the European Parliament and of the Council as regards the calculation, verification and reporting of data on the separate collection of waste single-use plastic beverage bottles;
- Information notice 2021/C 89/05 on marking specifications for single-use plastic products.

At the same time, the EU Commission prepared, through its own advisers:

- Supporting documentation for the delegated act as regards the calculation, verification and reporting of the recycled content of plastic products and SUP beverage bottles;
- The draft implementing act on rules for the calculation, verification and collection of information and data on the consumption of single-use plastic products.

In 2022 the European Commission published **Implementing Decision 2022/162** laying down rules for the application of Directive (EU) 2019/904 of the European Parliament and of the Council as regards **the calculation, verification and reporting on the reduction in the consumption of certain single-use plastic products** and the measures taken by Member States to achieve such reduction.

There is an obligation requiring Member States to calculate and report through an electronic register for beverage glasses, caps, lids and food containers. Furthermore, the exemption of EPR organizations from any compliance at European level is confirmed, but they are recognised as possible sources of data. The possibility of having a calculation methodology based on weight, as an alternative to the number of units, as used by CONAI, is also confirmed.

CONAI and/or EXPRA have been invited to the main work tables related to all of the above work on the SUP delegated acts and have responded to public consultations with the aim of enhancing operational experiences and programmes in order to avoid new inventions that do not find a practical use.

In 2022, the European Commission continued its work on the **review of Regulation 282/2008 on recycled plastic intended to be used in food contact materials**, for which it launched a public consultation. The draft Regulation of the European Commission establishes the regulations regarding:

- the placing on the market of recycled plastic in food contact materials (FCM);
- the development and operation of recycling processes that produce recycled plastic to be used for FCM;

- the use of recycled plastic FCM and the use of materials and plastic objects for recycling.

Article 6 of the Regulation is of particular importance, and stipulates that the use of plastic waste for the manufacture of new FCM must be derived exclusively from urban waste or retail food waste, be subject to separate collection, show specific levels of decontamination, and be subject to quality certification. The planned date for the entry of the Regulation into force is July 2022, after which, Member States will have two years to adapt their national regulations to comply with EU ones.

Under the **EU Multiannual Financial Framework** revised for the period 2021–2027, is the implementation of the new “Own Resources Decision”, which includes a share of revenue from a national contribution (**plastic levy**) calculated based on the weight of plastic packaging waste that is not recycled, with a rate of call of 80 euro cents per kilo. In this regard, the following new regulations were published in 2021:

- EU Regulation 2021/770 on the calculation of the own resource based on plastic packaging waste that is not recycled, on the methods and procedure for making available that own resource, on the measures to meet cash requirements, and on certain aspects of the own resource based on gross national income;
- EU Decision 2021/324 which appoints a group of experts from the Commission for plastic packaging waste statistics.

The implementing acts establishing the format for declarations are in preparation.

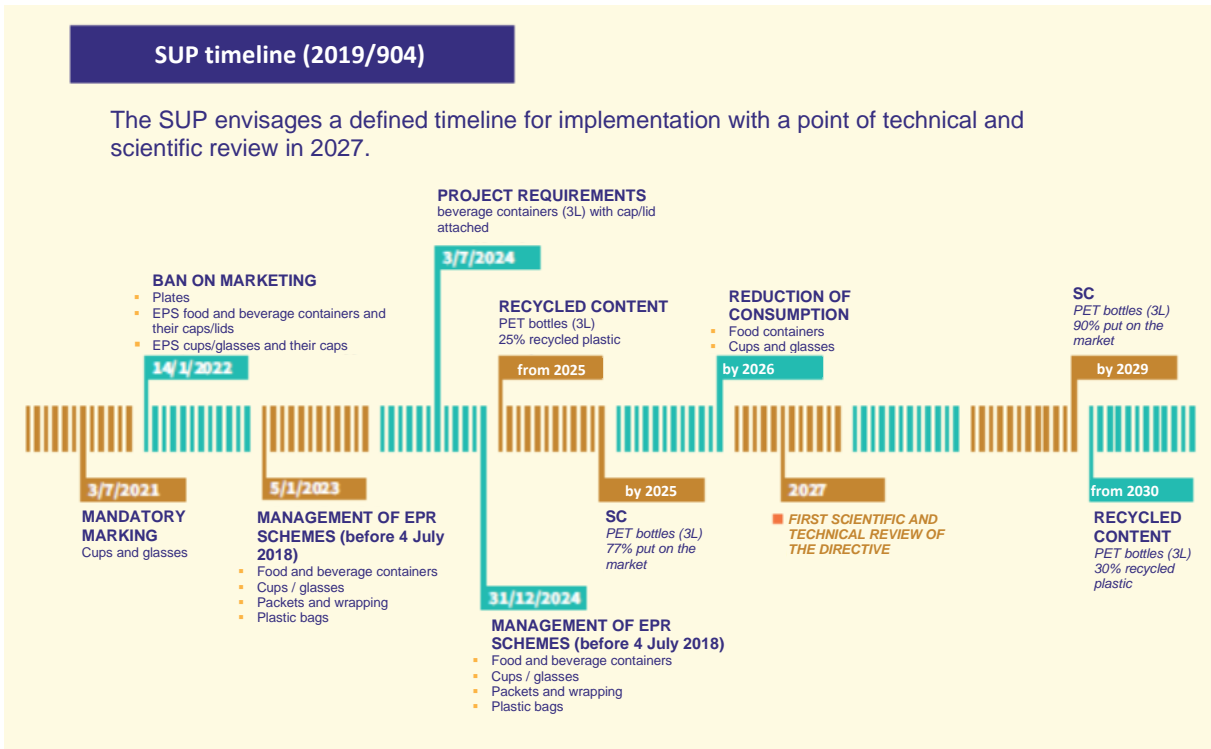
The issue of plastic products remains; in 2021 the Platform on Sustainable Finance submitted a draft report on the preliminary recommendations for the technical selection criteria for the **EU taxonomy** to public consultation. Among the other sectors, the Annex to the draft contains identification criteria regarding plastic goods and the conditions that these must meet to come under the EU taxonomy. Although the draft represents an important step in the mandate of the Platform in the Taxonomy Regulation, the technical selection criteria proposed in it represent neither the ultimate vision of the Platform, nor the official position of the Commission. Nevertheless, the draft recommends criteria for four non-climate environmental targets, covering water, the circular economy, prevention of pollution, biodiversity and ecosystems.

The international activity was constantly carried out in collaboration and with the contribution of the experts from the CONAI International Advisory Working Group and the EXPRA thematic working groups, which includes the Sustainability & Packaging WG chaired by CONAI.

1.3 National Regulations

Adoption of the SUP Directive

On 30 November 2021 Legislative Decree no. 196 of 8 November 2021 was published, implementing Directive (EU) 2019/904 “on the reduction of the impact of certain plastic products on the environment” (the so-called “SUP Directive”).



The measure came into force on 14 January 2022.

Following Italy's notification to the EU of the draft the aforementioned implementing decree, the EU Commission communicated a detailed opinion with technical remarks regarding in particular the measures that identify the exclusion of certain products from the scope of application of the decree and that conflict with the European Directive. In particular, the discrepancies concern the exclusion of some products from the scope of the provisions:

Plastic products	In the scope of the EU Directive	In the scope of the Italian National Decree
Paint, ink, adhesives, plastic coatings with a weight below 10% of the total weight of the product	✓	✗ excluded
Single-use plastic products	✓	✓

Containers for dry foods or foods sold cold that require further preparation, food containers in quantities above a single portion, single-portion food containers, sold in more than one unit



excluded

Biodegradable or compostable plastic products



excluded

for which the raw material reached
40% (60% since 2024)

Following Italy's implementation of EU Directive 2019/904 and the notice¹ of the national draft implementing decree of the same, the European Commission sent a detailed opinion to the Minister of Foreign Affairs and International Cooperation to highlight the discrepancies between the Italian and European regulations. The issuing of the detailed opinion also involved the obligation that Italy postpone the adoption of Legislative Decree 196/2021 to 23 March 2022 (6 months from the date of notice) and to report to the Commission about its intentions on that opinion.

To date, as already stated, Legislative Decree No. 196 of 8 November 2021 implementing the SUP Directive came into force on 14 January 2022, without any amendment and/or correction of the provisions addressed in the detailed opinion sent by the European Commission. For this reason, if Italy should fail to comply with the objections and requests of the EU Commission, could be party to the infringement proceedings, which is a tool towards ensuring compliance with EU law.

EU Decision – Calculation of Reduction in Consumption

On 7 February 2022 EU implementing decision 2022/162 of the Commission of 4 February 2022 was published, which lays down *rules for the application of the SUP Directive as regards the calculation, verification and reporting on the reduction in the consumption of certain single-use plastic products and the measures taken by Member States to achieve such reduction.*

The measure intervenes, among other things, with regard to calculation of the reduction in consumption of the following single-use plastic packaging:

- cups and glasses for beverages and the corresponding caps and lids;
- food containers.

¹ With regard to technical regulations, Member States are obliged to notify them to the Commission and the other states before adopting them; from that point on, the Member State may not adopt the regulation for three months, during which time the Commission and the States may examine the text and respond appropriately.

If the notified plans might impede the free movement of goods, the Commission may submit a detailed opinion to the notifying State, which extends the period during which the country cannot adopt the technical regulation by a further three months. In such case, the State that received the detailed opinion must reply explaining how it intends to proceed taking into account the Commission's comments. There is no established period within which this response should be provided, although it is preferable that it is as soon as possible, if possible, within six months of the notification. The dialogue can then continue until the regulation is adopted. If the regulation undergoes substantial amendments, the member state is obliged to notify it again.

The Decision came into force on 27 February 2022.

CALCULATION METHOD

In order to achieve an **ambitious and lasting reduction** in the consumption of certain **single-use plastic products (beverage cups and food containers)**, each **Member State** can choose between two alternative calculation methods:

CALCULATION METHOD 1:

TOTAL* WEIGHT OF THE PLASTIC IN SINGLE-USE PRODUCTS

$$\frac{\text{Total weight (t)} - \text{Total weight (2022)}}{\text{Total weight (2022)}} \times 100$$

CALCULATION METHOD 2:

TOTAL NO. OF ITEMS PUT ON THE MARKET IN THE REFERENCE YEAR

$$\frac{\text{No. of products (t)} - \text{No. of products (2022)}}{\text{No. of products (2022)}} \times 100$$

Where the **number** or **weight** of single-use plastic products placed on the market is **unrepresentative** due to **significant movements within the EU**, **adjustments are permitted** to take **import-export streams** into account.

REPORTING OF DATA and the measures adopted

REPORTING PROCEDURES

Member States must **use electronic registers as far as possible** to **collect** and **report** data, indicating the **methods** and the **sources used** for **calculation** according to the format established by the **Commission**

PUBLICATION OF DATA

The **Commission publishes the data collected and reported**, unless a **Member State** provides a **justified request to refuse publication**

QUALITY CONTROL

The **Commission publishes** the quality control checks reported by the Member States, which show the **checks carried out** on the data, the **main factors** affecting the **accuracy of the data** and **explanations for variations/deviations**

LIST OF MEASURES

Each **Member State** is required to provide a **list** indicating the **measures taken** to achieve the consumption reduction objectives

Competition Bill and PNRR-bis Implementing Bill

On 4 November 2021 the Council of Ministers approved the 2021 annual market and competition bill.

The measure, which is still under analysis by Parliament, involves, among other things, the amendment to Article 224, paragraph 5 of the Environmental Code so that “*managers of sorting facilities (CSS)*” are excluded from the parties to the National Framework Programme Agreement for the management of packaging waste disposed of to the public service.

The bill also intervenes on the issue of waste management services with regard to Article 238, paragraph 10 of the Environmental Code, reducing the minimum period for non-household users generating so-called assimilated waste to make the choice between using a public service provider or the market, maintaining this choice, also with regard to the public service, for the period indicated, no less than two instead of five years.

The measure also amends Article 202 of Legislative Decree No. 152 of 2006, concerning the integrated urban waste management service, by adding two new paragraphs that assign new tasks to the Italian Regulatory Authority for Energy, Networks and Environment (ARERA), which will have to define adequate technical and quality standards for the performance of disposal and recovery activities, proceeding to the verification of minimum levels of quality and the efficient coverage of costs.

It should be noted that an amendment to the Competition Bill was submitted, which was later withdrawn, affecting the article relating to the Framework Programme Agreement and providing for the coverage of costs, by Self-compliance EPR organizations, relating to their packaging waste *“produced and disposed of to the public separate collection service even when the objectives for recovery and recycling can be achieved through collection on private premises.”* The same amendment also envisages that, in order to fulfil the aforementioned obligations, these schemes could make use of the Packaging Material Consortia, although granting the latter the costs related to the management of packaging waste.

The same amendment was also submitted to the Bill converting into law of Decree-Law No. 36 of 30 April 2022, on *“further urgent measures for the implementation of the National Recovery and Resilience Plan (PNRR)”*, which is still under analysis by the Committee on Constitutional Affairs and Education of the Senate.

Hearing – Competition Bill

Last 17 February, CONAI attended the hearing at the Industry Committee of the Senate on the bill regarding the *2021 Annual Market and Competition Bill* and in particular on the issues affecting:

- the exclusion of sorting facilities (CSSs).
- the reduction of the minimum period for choosing to use the public service or to turn to the market.

On the first point, CONAI took note of the new provision, highlighting, however, the collaborative and profitable work that had been carried out during the negotiations for the New

National Framework Programme Agreement also with the CSSs themselves. The negotiations that have taken place to date were therefore highlighted, stressing the importance and participation of all parties involved, both public and private.

On the second point, sharing the choice, CONAI pointed out the possibility of the bill addressing the issue of the management responsibility of EPR schemes regarding packaging waste that ends up in urban separate collection. In this respect, in fact, it was deemed necessary to emphasise that the costs of packaging waste collection and management activities must be borne by EPR schemes in proportion to the respective packaging placed on the market and disposed of into the public collection service, and that this must also occur when this is able to achieve recovery and recycling targets through the management of only packaging waste coming from a channel other than urban collection, while disposing of a part of their own waste to the latter.

COREPLA and CORIPET also attended the hearing.

After briefly illustrating the Consortium's activities, COREPLA shared the legislative provision to exclude CSSs from the negotiations for the new National Framework Programme Agreement and reiterated the need for each EPR scheme to bear the costs of managing the packaging waste disposed of in the separate collection.

CORIPET explained how the Self-compliance EPR organization is structured, the companies that belong to it and the peculiarities of selective collection through digital recycling stations, highlighting the objectives set out in the legislation, including the SUP Directive, and the need for operators to be placed in a position to achieve these objectives.

Parliamentary Questions

On 10 February, Undersecretary of State for the Ecological Transition Ilaria Fontana gave immediate responses to questions signed by member of parliament Generoso Maraia (M5S parliamentary group) in the Environment Committee of the Chamber on the timing for adopting the ministerial regulation on the implementation of provisions regarding deposit refund systems applying to packaging.

The question originated from the new formulation of Article 219-bis of Legislative Decree 152 of 2006, which provides for the establishment of deposit refund systems for certain single-use packaging (plastic, glass and aluminium) as well as the placing on the market of a minimum amount of reusable packaging through the adoption of a decree by the MiTE to establish the timing and means of implementation, setting, among other things, targets for selective collection to be achieved annually and the deposit values to be assigned to returned packaging.

The Ministry stressed that the adoption of this implementing decree requires further work considering that these operating procedures seem to be exclusively aimed at working in favour of systems aimed at recycling and not also on the reuse of such packaging as provided for by the same regulation. For this reason, the MiTE said that it would intervene with a legislative amendment to the Article in question, through the corrective measures set out in Legislative Decree 116 of 2020, in particular to extend the deposit refund obligation for reuse of packaging and collection for recycling to all types of packaging and packaging materials and not only to “plastic, glass and metal packaging used for water and other beverages”.

Finally, the Ministry highlighted its own intention to quickly set up a consultation forum with all industry operators, including at least CONAI, the Self-compliance EPR packaging scheme, ANCI, trade associations in distribution and in the hospitality industry (“HORECA”), as well as technical institutes of reference (ISPRA [Italian Institute for Environmental Protection and Research] and the ISS [Italian National Institute of Health]) to define the implementing decree.

Legislative Decree 116/2020 and the "Milleproroghe" (Thousand Extensions) Decree² - Environmental Labelling

The new additions to the Environmental Code with the amendment of Article 219, paragraph 5, regarding the obligation for **environmental labelling** on packaging, stipulate that “*all packaging must be appropriately labelled according to the procedures established by the applicable UNI technical standards to facilitate the collection, reuse, recovery and recycling of packaging, as well as to provide consumers with the correct information on their final destination*”. The regulation also requires producers “*to indicate the nature of the packaging materials used, on the basis of Commission Decision 97/129/EC, for the purposes of identifying and classifying packaging.*”

The so-called “Milleproroghe” Decree-Law, as converted into law, however, as previously occurred with further regulatory measures, provided for the suspension of the environmental labelling obligation on packaging until 31 December 2022 with the possibility of the depletion of stocks already on the market and/or labelled until 1 January 2023.

The provision introduced a further paragraph that envisages the issuing of a ministerial decree of a non-regulatory nature for the adoption of technical guidelines for the correct labelling of packaging.

² The Milleproroghe Decree was permanently converted into law no. 21 of 26 February 2021, published in Official Journal no. 51 of 1 March 2021.

On 7 April 2022, the Ministry of Ecological Transition notified the European Commission of the non-regulatory draft decree containing the [“Technical Guidelines for the environmental labelling of packaging”](#), adopted pursuant to Article 219, paragraph 5.1. of Legislative Decree 152/2006. The aforementioned paragraph – introduced by Article 11, paragraph 2 of Legislative Decree No. 228 of 30 December 2021, (as converted with amendments by Law No. 15 of 25 February 2022) – in fact stipulates that *“5.1. Within ninety days from the date of this provision coming into force, the Ministry of Ecological Transition shall adopt, with a non-regulatory decree, the technical guidelines for the labelling referred to in paragraph 5”*.

The EU Commission notification (no. 2022/196/I) was executed on the basis of Article 5 of Directive 2015/1535, which requires Member States to notify the Commission of *“every draft technical regulation, except where it merely transposes the full text of an international or European regulation [...]”*. The *status quo* period – during which Italy may not adopt such guidelines and within which the European Commission and the other Member States may examine the text and, if necessary, submit comments – will end on 8 July 2022.

2022 Budget Law

The 2022 Budget Law has provided for certain interventions of interest to environmental issues; these include:

- the granting of a contribution of 1 million euros for 2022, to producers of wines with protected designation of origin (PDO) or protected geographical indication (PGI) dedicated to investment in digital schemes that could involve the use of a QR code on the label to best convey certain information;
- the setting-up of a Fund to support the industrial transition with an allocated 150 million Euros from 2022, for facilitations to companies, particularly those operating in the high energy intensity sectors, for investing, among other things, for reuse, for productive usage of raw materials and recycled materials;
- the setting-up of a Fund with the MiTE (Ministero della Transizione Ecologica [Ministry of Ecological Transition]) aimed at encouraging the opening of centres for preparation for reuse, with an allocated 3 million Euros each for 2022 and 2023.

Italian Plastic Tax - 2022 Budget Law

The 2022 Budget Law provided for the postponement of the entry into force of the tax to 1 January 2023.

MiTE Decree – Recycled Product Bonus

The Ministry of Ecological Transition gave the green light for tax credit applications for companies and professionals that purchased recycled products and quality compost in 2020. The contribution came from a previous Decree-law from 2019 and was governed by Ministerial Decree of 6 October 2021.

The facilitation consists of a tax credit of 25% of the expenses incurred in 2020 for the purchase of semi-finished products and derivative finished products, for at least 75% of their composition, from recycling of waste or scrap with suitable certification attached certifying its contents.

The requests could be submitted, online only, by companies and professionals from 22 December 2021 until 21 February 2022.

MiTE Decree – Tax Credit

The MiTE Decree of 14 December 2021 was published in the Official Journal on 9 February and governs the criteria and means of application and accessibility of the tax credit established under Article 1, paragraph 73 of the 2019 Budget Law.

The tax credit for companies is 36% of expenses incurred and documented for the purchase of:

- finished products made from materials deriving from the separate collection of plastic packaging;
- biodegradable and compostable primary and secondary packaging according to standard UNI EN 13432:2002, including:
 - paper and cardboard packaging, with the exception of paper packaging printed with ink, paper packaging that is processed or coated with chemicals other than those normally used in paper pulp and paper packaging laminated with other materials that are not biodegradable and compostable;
- non-impregnated wooden packaging;
- primary and secondary packaging derived from the separate collection of paper;
- primary and secondary packaging derived from the separate collection of aluminium;

In order to be eligible to receive the economic contribution, the aforementioned products and packaging must meet certain technical requirements that are demonstrable through certification, including

- certain percentages of recycled material content;
- biodegradability and compostability;
- compliance with specific UNI standards.

The credit is granted for expenses incurred in 2019 and 2020 up to a maximum annual amount of 20,000 Euros for each beneficiary.

The Salvamare Bill

The bill initiative of former Ministry for the Environment, Land and Sea, Sergio Costa, on “Provisions for the recovery of waste in the sea and in inland waters to promote the circular economy (“Salvamare Law”)”, was approved by Parliament.

The measure was further combined with other bills submitted to the Senate as they were similar to the issues regulated. The combined bills contain “*provisions to prevent and reduce plastic waste for the protection of terrestrial and marine ecosystems*”, “*provisions for the recovery of solid waste disposed of into the sea and for the protection of the marine ecosystem*” and “*provisions for the eco-sustainable management of beach-cast plant biomass to protect the marine and coastal ecosystem*”.

The measure, it should be recalled, aims to contribute to the restoration of marine ecosystems and the promotion of the circular economy, as well as to raise public awareness for promoting virtuous behaviour aimed at preventing the abandonment of waste into the sea, lakes, rivers and ponds and the proper management of such waste.

The effects of the relevant points of the bill include:

- Amendment of the definition of “urban waste” pursuant to Article 183, letter b-ter of Legislative Decree 152/2006, to provide for accidentally fished or voluntarily collected waste to also be treated as urban waste;
- The procedures for managing accidentally fished waste. The master of the fishing vessel and ship may deliver the accidentally caught waste to the port reception facility. In the event of a boat mooring in an area that is not covered by a local port system authority, the Italian municipalities shall ensure that waste is delivered to collection facilities, including temporary ones, set up in the nearby area to the moorings. Delivery to the port reception facility is free of charge and is set up as a temporary storage pursuant to Legislative Decree 152/2006.

- The costs of managing accidentally fished waste will be deducted in a specific component of the tariff for the integrated waste service in order to spread them throughout the national community. It is also envisaged that the criteria and procedures for definition of the tariff component are to be regulated by the Regulatory Authority for Energy, Networks and Environment (ARERA). ARERA will also have to identify the parties and organizations obliged to provide the data and information necessary for its determination;
- Promotion of the circular economy and plastic recycling, providing for the adoption within six months of the entry into force of a decree measure of the Ministry of Ecological Transition, establishing the criteria and means for identifying the point at which a material ceases to be classified as waste (so-called “end of waste”);
- Environmental rewards for fishing industry entrepreneurs who, in the course of their business, use materials with reduced environmental impact, participate in clean-up campaigns or dispose of accidentally fished waste. Italian municipalities may organise an incentive scheme for respecting the marine environment to provide recognition to boat owners, not engaged in professional activities, who recover and dispose of accidentally fished or voluntarily collected plastic waste to onland facilities;

Establishment of a permanent Interministerial consultation forum, at the Ministry of Ecological Transition, to coordinate action to combat marine pollution and to achieve the aims of the law. Any party considered useful to represent the interests involved, inter alia, may participate in the forum.

Institutional relations

CONAI promotes and supports moments of analysis and discussion with various institutional stakeholders and trade associations in order to strengthen efficiency, transparency and suitability of the EPR organization.

CONAI has also carried out numerous interventions with regard to public consultations on strategic documents and guidelines at all institutional levels. A summary of the interventions is given below.

Towards the EU Commission:

- Sustainable finance platform – **draft report technical screening criteria of objectives 3-6 of the taxonomy regulation**, where an evaluation is suggested of the opportunity to envisage an overarching chapter dedicated to “Manufacture of Circular Packaging” in

general, as is done for the other categories present; to point out the opportunity to propose an extension of the concept of "Design for recycling in practice" (ref. A.2) also to packaging solutions that guarantee the recycling of packaging material in applications, still on an industrial scale, even if different from packaging; to clarify the aspects that must be considered to ensure correct design for recycling.

Towards MITE:

- **Circular economy strategy**, where the proposals in the consultation document of the Ministry of Ecological Transition comprehensively identify the principles and measures useful to allow an effective circular economy model to be implemented. A more specific position is then expressed regarding the importance of coordinating multi-level governance with the structural resources available, favourable taxation for ecological transition, the development of conditions that focus on instruments and incentive measures for the growth of the virgin raw materials and second raw materials market, and the importance of means of testing, consumer-oriented education programmes and interdisciplinary training;
- **national waste management programme**, CONAI believes that the methodological approach and the proposals in the National Waste Management Programme – provided for in Article 198-bis of the TUA (Consolidated Environmental Act, Legislative Decree No. 152/2006) – correctly establish principles, objectives and strategies, having chosen to set the entire document with a strategic vision over a six-year time frame with a technical approach that aims primarily to bridge the gap in plants present nationally, without getting involved with precise interventions or projects, which are delegated to regional planning. In fact, it is believed that it will only be possible to pursue the objectives set at the European level for the circular economy through planning structural interventions on plants, acting on the streams currently classified in the PNRR as strategic for bridging the gap between regions and achieving the objectives of the circular economy. Further details are reported regarding:
 - multi-level collaboration and coordination measures;
 - effective and efficient planning starting with the definition of optimal areas for collection, to activate economies of scale and scope;
 - PNRR and skills: support for local authorities so as not to miss the opportunity for structural funds;
 - the principle of regional self-sufficiency;
 - strategic streams;
 - planning tools;

- LCA analysis;
- national plan for environmental communication and knowledge on waste and the circular economy.

NATIONAL WASTE MANAGEMENT PROGRAMME – (PNGR) _ STRATEGIC ENVIRONMENTAL ASSESSMENT (VAS) PROCEDURE

The MITE launched the VAS procedure on the National Waste Management Programme (Programma Nazionale per la Gestione dei Rifiuti – PNGR) – **with a public consultation until 29 April 2022.**

The PNGR **defines the macro-objectives, criteria and strategy guidelines** that the autonomous Regions and Provinces must adhere to **in drawing up the Regional Waste Management Plans** (Piani Regionali di Gestione dei Rifiuti – PRGR).

The PNGR has a forecast period of several years (**2022-2028**), orienting public policy and promoting private initiatives for the development of the circular economy. This is set up as a **strategy and implementation pillar of the National Strategy for the Circular Economy.**

The PNGR **also provides an initial national recognition of plants**, divided by type of plant and by region and **guidelines to address the gaps in plants in the local area**, however, without containing precise interventions or projects. **The Regions are required to approve or adapt the relevant PRGRs within 18 months of publication of the PNGR**, unless they are already compliant in terms of content or able to ensure the attainment of European objectives.

For the development of the Programme **strategic streams are identified, such as scraps derived from processing and plastic waste, proposing lines of action aimed at strengthening the separate collection, investment in infrastructure and new processing technologies (chemical recycling).** Packaging was NOT considered to be a critical stream.

The PNGR also addresses the definition of macro-areas for the rationalisation of plants **reaffirming the central importance of the principles of “self-sufficiency” and “proximity” especially for organic waste** and establishing how their management should occur within the region.

Towards ARERA:

- **DCO 72/2021/R/Rif** on the first guidelines for regulating the quality of the urban and related waste management service where it was intended to promote feedback as part of the promotion of impartiality in evaluations, a more precise definition of the perimeter referring to some of the proposed technical quality parameters, and a harmonisation of the time frames for adapting to the new quality standards with those for revising the Waste Tariff Method;
- **DCO 196/2021/R/RIF** on the first guidelines for definition of the tariff method for the second regulatory period, where the revisiting of the mechanism for sharing of revenue – which puts all revenue from the extended producer responsibility schemes on the same level – is favourably supported, as well as the harmonisation of time frames to adapt the new quality standards with those for revising the Waste Tariff Method;
- **DCO 282/2021/R/RIF** on the definition of the tariff method for the second regulatory period where agreement was expressed about the approach promoted, from the type of plant subject to the regulatory intervention and the justifications given for the exclusion from the regulatory perimeter of the infrastructures serving the treatment and recovery of separate dry waste. In addition, and in reference to the importance of a precise definition of the plants defined as 'minimum', we intended to promote a clarification of this with regard to the criteria that will determine its nature, with reference to the company profile of the infrastructure operators, at the same time presenting an observation of possibility of automatic qualification as additional plants located in areas for which the list of minimum plants is not submitted to the Authority;
- **DCO 422/2021/R/RIF** on the regulation of service quality where the central importance of the attention is given to the issues of contractual and technical quality of the waste management service;
- **DCO 465/2021/A** on the strategic framework of ARERA in which CONAI shall confirm its appreciation for the conditions of the regulator in pursuing the criteria of efficiency and transparency in management. In particular, the full support of the collaboration and sharing of the current projects by the CONAI structure is reiterated.

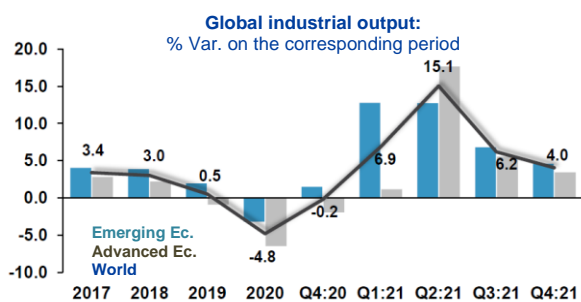
In addition, over the past year and in the first few months of 2022 exchange with ISPRA at the technical level has intensified considerably on the issue of new methods for calculating recycling targets for packaging material and in support of the Institute in ongoing discussions at the level of Eurostat.

1.4 Macro-economic context

In 2021 both industrial production and international business recovered all of the losses experienced in the previous year, although this slowed down in the second half of the year. Global commercial trade increased by 9% on average in 2021 (a rate that implies flexibility in global GDP of around 1.6).

Once the rebound effect in the second quarter of 2021 had ended, which was heightened by manufacturing facing months of lockdown, in the subsequent months, global industrial production progressively moderated its growth trend, closing the year with an annual average increase of close to 8% (9.1% for emerging economies and 6.6% for advanced ones).

The downturn also reflected the impact of persistent bottlenecks on the supply side of manufacturing, especially in the automotive industry.



Persistent inflationary pressures and the continuation of the pandemic led to a slow in economic growth and trade worldwide being estimated, which the outbreak of the conflict between Russia and Ukraine has darkened further.

The current conflict, whose outcome is presently unpredictable, is impacting negatively on growth and inflation forecasts: energy and food commodity prices which were already rising are skyrocketing and we are witnessing an increase in family and business uncertainty.

In the US, a progressive deceleration in growth is expected due to supply constraints, reduced monetary policy support, reduced impetus in fiscal policymaking and the erosion of purchasing power for families and businesses caused by high inflation.

Europe – in particular eastern countries – is expected to experience the greatest repercussions caused by the conflict. For the EMU the high dependence on Russian supplies of gas and petroleum (particularly evident for Germany and Italy) may curb the growth in a more persistent way than expected, given the consequent shock of energy prices.

The Chinese economy will stabilise from 2022 onwards at rates of development a little under 5% on average per year, due to the exhaustion of the fiscal policy incentive adopted around the pandemic and the expected slowdown in the real estate sector.

	2009	2021
GLOBAL GDP	-0.4	5.8
USA	-2.5	5.7
EMU	-4.5	5.2
Germany	-5.6	2.8
China	9.2	8.1
GLOBAL TRADE	-12.3	9.0

SOURCE: Prometeia, February 2022 Brief

The ongoing conflict will limit global growth through three main channels, albeit with differing intensities in different areas:

- The further worsening of tensions in the virgin raw materials market;
- The waning trust of families and businesses;
- The impact of sanctions in the financial sector and in global business.

The impact should be greatest in Europe, somewhat less in the US and practically nil for the Chinese economy.

Aside from the direct impact, for the EMU there is the burden of the effects of tensions in the virgin raw materials market. In addition to the limited supply in some industries, there is also the price increase, which already showed strong growth last year and which the conflict could prolong, especially on energy inputs (pervasive in all sectors).

The resulting rise in inflation is estimated to limit growth in consumption and increase uncertainty for families and businesses.

Gross domestic product and global trade
intensity of the impact of the conflict on growth

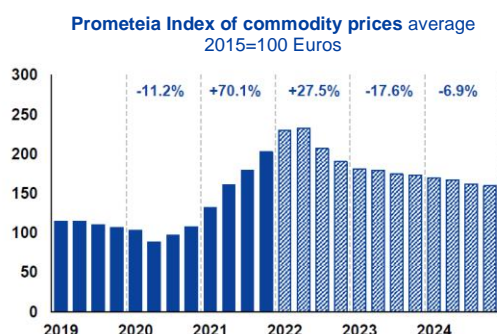
	2022	2023
Global trade	↓ ↓ ↓	↓
Global GDP	↓	≡
USA	↓	≡
CHINA	≡	≡
EMU	↓ ↓	↓
Central Europe	↓ ↓ ↓ ↓	≡

Source: Prometeia estimates

The bounce-back in metal, plastic and wood prices in the first half of 2021 was followed by even more marked increases in energy costs (first and foremost natural gas and electricity) in the third quarter, leading the Prometeia Index to close 2021 with a record increase (approx. +70%). Tensions have further escalated since the beginning of March this year, following the Russian invasion of Ukraine, with gas and electricity prices again hitting new heights. Assuming that the conflict ends relatively soon, and that it does not significantly disrupt Ukrainian production and trade structures, the prices of most commodities should gradually return from the second half of 2022 onwards.

In 2022, average prices for packaging commodities are expected to consolidate to levels similar or slightly lower than in 2021, with the exception of aluminium (+36% in Euros) and cellulose (+10.5%), which involve more energy-intensive production processes.

The slowdown of the international cycle and the reduction of the costs of energy generation may favour a substantial price increase only from 2023, which, in any case, will remain at significantly higher average levels than pre-Covid.



	2021	2022	2023	2024	2025-'26
Wood	83.8 ▼ (+88.6)	-4.4 ▲ (-20.4)	-14.0 ▼ (-10.1)	0.9 ▼	-5.4 ▼
Plastic	68.6 ▲ (+64.0)	0.4 ▲ (-26.4)	-17.3 ▼ (-5.4)	-3.5 ▼	-8.3 ▼
Steel	106.7 ▼ (+113.5)	-0.7 ▲ (-20.4)	-31.8 ▼ (-14.5)	-3.0 ▼	-8.1 ▼
Aluminium	40.6 ▲ (+30.6)	35.9 ▲ (-2.7)	-19.2 ▼ (1.9)	-8.2 ▲	-3.5 ▼
Cellulose	40.5 ▲ (+39.2)	10.5 ▲ (-7.7)	-15.9 ▼ (-1.4)	-1.4 ▼	-2.2 ▼
Silica (glass)	2.8 ▼ (+5.7)	-3.5 --- (-3.5)	-1.2 ▲ (-1.6)	3.8 ▲	4.8 ▼

The (partial) exclusion of Russia from the international payments system, uncertainty over possible countermeasures from Moscow, and, not least, the damage in terms of reputation associated with operating in Russia have convinced many companies (Exxon, BP, and Equinor to name but a few operating in the energy sector) to suspend activities and/or sever supply channels in the country, generating the prospect of a hefty contraction in Russian exports. It should be remembered that Russia is one of the main countries producing energy feedstocks, with a share in total global output close to 17% for petroleum (12.6% in the case of gas), but its importance also extends to other important commodities. In terms of those used for packaging production, unsurprisingly, aluminium is one of the commodities affected by the most intense increases in the days following the outbreak of the conflict.

The role of Russia and Ukraine is also relevant as a source of provision of virgin raw materials used in the steel industry, having seen significant price increases since the end of February. As far as Italy is concerned, over 56% of Italy's imports of iron ore, pellets and cast iron in fact originate from these two countries (36% Russia, approximately 20% Ukraine).

The effect on the packaging recycling chains is also related to another very relevant aspect: all MPS closed 2021 at much higher average levels than those observed at the beginning of the year.

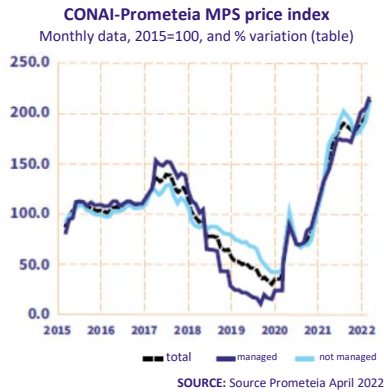
During 2021 CONAI, together with Prometeia, arranged a **reference index for the values for the main packaging second raw materials (MPS) nationally**.

The Prometeia-CONAI second raw material index, a summary of price trends in the main MPS recycled in Italy, rose significantly by about 146% in 2021, compared with 2020. The most significant contribution to the index increase came from pulp prices, which ended 2022 over 300% higher in Euro terms than in 2021 as a result of increased packaging input demand in both Italy and the rest of Europe. There were also above average increases for scrap glass (+126% approx.) and for “secondary” plastics: in 2021 polyethylene prices increased more than 100%. Scrap iron and aluminium also had an expansive trend which, following on from price rises in the corresponding raw materials (primary aluminium and steel, in particular long), saw increases of approx. 66% and 78% respectively in Euros as compared to 2021.

CONAI-PROMETEIA SECOND RAW MATERIAL INDEX

A summary of price trends in the main MPS recycled in Italy

A 146% price increase in 2021 as compared to 2020.



Factors contributing to index increases:

- **pulp prices**, which ended 2022 over 300% higher in Euro terms than in 2021 as a result of increased packaging input demand in both Italy and the rest of Europe.
- above average increases for **scrap glass** (+126% approx.) and for **'secondary' plastics**: in 2021 polyethylene prices increased more than 100%
- increased price trends for scrap iron and aluminium which – following on from price rises in the corresponding raw materials (primary aluminium and steel) – saw increases of approx. 66% and 78% respectively in Euros as compared to 2021

The upward trend was also confirmed in the most recent observations. With the exception of pulp (-7% in January, compared to December, after being in decline in the last quarter of 2021), all MPS recorded price hikes in the first month of the year, in some cases (scrap glass, +20%, and scrap iron, +16.2%) intensely.

It should be noted how we are witnessing a real change in the approach to the market for second raw materials, which have now become real commodities, even breaking the historical links with the prices of virgin raw materials. This phenomenon is particularly evident in the area of recycled materials from the plastic packaging supply chain. In particular, the growing demand for rPET for bottle production, also linked to the new SUP regulations, is leading to a misalignment between national demand and supply of rPET for food use, with consequent repercussions on prices.

At the same time, this upward trend in second raw materials is causing some concern with regard to possible financial speculation, which may even lead to a delay in the final recycling of the materials.

BES ISTAT

The BES framework represents a multidimensional approach to measuring “Benessere equo e sostenibile” [fair and sustainable welfare (BES)] with the aim of integrating the information provided by economic activity indicators with the fundamental dimensions of well-being,

accompanied by measures of inequality and sustainability. Twelve essential domains for measuring well-being in Italy have been identified: Health, safety, education and training, subjective well-being, work-life balance, landscape and cultural heritage, economic welfare, **environment**, social relationships, innovation, research and creativity, politics and institutions, **quality of amenities**.




The report³ shows that the covid-19 pandemic profoundly changed many aspects of daily life for individuals, families, the organization of society and the world of work, leading to new set-ups and ongoing changes that in turn had effects on health, education, work, the environment and services and as a result, on individual well-being.

The overall picture is composite, and is still overshadowed by the pandemic, from a demographic point of view, with a significant reduction in life expectancy at birth in 2020 at a national level, which reached drastic levels in some regions, as well as an economic point of view – for example, the sharp decline in employment in cultural and creative fields – and also environmentally, which still remains high and with negligible improvement. Many gaps have remained, or even widened: from life expectancy at birth, which largely recovered in the north in 2021 but decreased again in the south, to preventable death, which remains higher in many southern regions. From local authority spending on culture, for which the centre-north clearly benefits in terms of the regional gap, to the impact of forest fires and unauthorised building developments, which is stronger in the southern regions. By and large, the pandemic translated into a regression for females in terms of welfare: for example, in levels of mental well-being and employment, especially for mothers with young children⁴.

From an environmental point of view, the decrease in emissions of CO₂ and other climate-altering gases that began over a decade ago is continuing, accompanied in recent years also by a reduction in domestic material consumption. PM2.5 pollution is dropping, although it remains high and with negligible improvements where the phenomenon has historically been severe. The increase in soil consumption produced by artificial waterproof coverings is continuing, although at a slower rate than in past years. The per capita generation of urban waste went down due to the effect of the economic cycle and the amount still sent to landfill continues to drop. The increase in the last few years in the percentage of electrical energy from renewable sources established itself.

³ 2021 BES Report - https://www.istat.it/it/files//2022/04/BES_2021.pdf

⁴ https://www.istat.it/it/files//2022/04/Presentazione_Presidente-Istat.pdf

STATISTICAL DOMAIN	GLOBAL INDICATORS	MAIN TREND	MAIN CONAI TOOLS LINKED TO THE INDICATOR ⁵
Environment	19 - Concerns about climate change 20 - Satisfaction with the environmental situation 21 - Concerns about loss of biodiversity	The effects of climate change and the increasing greenhouse effect are one of the environmental problems that people are most concerned about. However, although until the year before the pandemic (2019) the percentage of people who considered this to be one of the main environmental problems was constantly growing, there was a reversal in 2020–2021 (from 71% in 2019 to 66.5% of people aged 14 and over in 2021). In 2021, the level of interest in these issues returned to that recorded in 2018 (66.6%), showing an increase in attention alongside the global protest movements of 2019–2020	Specific Programme 10 - Training and Skills 
Quality of services	10 - Separate collection service for urban waste (resident population in municipalities with separate collection >65%)	In 2020 the percentage of separate waste collection was at 63% of domestic output, up 1.8 points from 2019. Organic waste accounts for most of the separate waste (39.3%), followed by paper and cardboard, which represent 19.2%, glass 12.2% and plastic 8.6%. In particular, 56.7% of households in Italy live in a municipality that has achieved the target of 65% separate collection.	Specific Programme 4 - Interventions to support local authorities Specific Programme 5 - Local communication call 
Environment	15 - Urban waste generated per inhabitant (ISPRA)	In 2020, compared to the year before the pandemic, the production of urban waste in Italy fell to 28.9 million tonnes (-3.6% of the total amount compared to 2019), 487 kilograms per inhabitant (-16 kilograms per capita), almost returning to the lowest per capita value since 2010, recorded in 2015 (486.2). Compared to 2019, the reduction in waste generation, both in terms of total tonnes and per capita value, was most significant in the north-east (-3.7%	Specific Programme 2 - Tools for prevention 

⁵ Please see the CONAI Environmental Programme <https://www.conai.org/download/dichiarazione-ambientale-aggiornata-al-2022/>

		tonnes and -20 kilograms per inhabitant) and especially in central regions, with a reduction of 5.4% in tonnes and 28 kilograms per capita.	
Environment	16 - Delivery of urban waste to landfill (ISPRA)	In the last 10 years, the percentage of urban waste sent to landfill, which has a high impact on the environment as well as on public health, more than halved to an average annual rate of -2.4%. In 2020, 20.1% of all urban waste was sent to landfill; this was 20.9% in 2019 and 46.3% in 2010. The share of the north-west and the north-east is well below the average; the centre and the south have trends and values nearer to the average, while in the islands much higher shares are observed. As stated, these figures are gross of streams into and out of the regions and of allocations and therefore do not allow an assessment of the performance of the regions.	Specific Programme 2 - Tools for prevention 
Environment	02 - Emissions of CO ₂ and other climate-altering gases 14 - Domestic material consumption, quantity of matter other than air and water used annually by the socio-economic system and released into the environment or accumulated in man-made stocks	The contribution of emissions generated by households in 2020, mainly due to the consumption of fuels for private transport and domestic use, is 1.7 tonnes CO ₂ equivalent per inhabitant, the lowest recorded since 2008 and equivalent to a reduction in household emissions of about 15 million tonnes compared to 2019. Household emissions represent about 25% of total emissions In 2020, 45,920 million tonnes of matter were consumed, about 8% less than the previous year and in contrast to the gradual growth recorded in 2017–2019. In 2018, domestic material consumption was distributed geographically, with the highest in the north-west (28%) and the lowest in the islands (11.4%). At the regional level, there were significant differences related to the main regional socio-economic indicators. Lombardy recorded the maximum value of 87 million tonnes, followed by Emilia-Romagna (46 million tonnes), Puglia (42 million tonnes) and Piedmont (37 million tonnes).	LCC Tools and DA - Raw material savings

1.5 The Environmental Situation

On 4 April 2022, the summary for policymakers of the IPCC working group report III⁶, *Climate Change 2022: Mitigation of climate change* was approved by 195 member governments of the IPCC, with an online session for approval that began on 21 March. It is the third part of the Sixth IPCC Assessment Report (AR6), in the completion phase in 2022. The third volume (WG3) of the Sixth IPCC Assessment Report is the most up-to-date and complete scientific review of climate change and provides a documented and detailed framework, not only for policymakers but also for the entire scientific community.

The messages in the report are sadly not comforting – in fact, **we are not on track to limit warming to 1.5°C, with average annual greenhouse gas emissions in 2010-19 acknowledged to be the highest in human history.** Without immediate and sizeable reductions in greenhouse gas emissions in all sectors, the 1.5°C target is out of reach. In the scenarios assessed by the IPCC, **limiting warming to around 1.5°C requires global greenhouse gas emissions to reach peak levels by 2025 at the latest, and then, by 2030, to be reduced by 43% compared to 2019 levels** (figures close to those recorded in the 1990s) - **with a 34% reduction in methane gas at the same time.** It would also appear to be necessary to arrange strategies and concrete actions for rapid and deep reductions in greenhouse gas emissions over the next few decades in the 2030s and 2040s, **to reach zero net carbon dioxide emissions in the early 2050s.**

The next few years will be crucial and ambitious and effective mitigation requires coordination between governments, the definition and implementation of strategies, and the building of consensus between different parties affected. The report looks beyond technologies and shows that, **although financial streams are three to six times lower than the levels we need by 2030 to limit warming below 2°C, there is sufficient global capital and liquidity to fill the investment gap.** However, governments and the international community need to give a clear signal that includes a stronger alignment of finance and public sector policy. **Without the strengthening of the policies adopted by governments,** greenhouse gas emissions are predicted to continue to increase after 2025, leading to **average global warming that would reach 3.2°C by 2100.**

In all sectors, there are options available that can at least halve emissions by 2030 from energy – through reducing the use of fossil fuels by using new carbon stock solutions – to

⁶ Intergovernmental Panel on Climate Change

industry – **through more efficient use of materials, reuse and recycling of products and the minimisation of waste that is currently under-used in industrial policies and practices.**

Finally, people play an important role: transport, food and energy consumption. **Individual actions can accelerate change in many ways.** The initiatives of individuals alone are not enough to combat climate change, but they have an important role to play in promoting virtuous behaviour and leading decision-making processes towards a more rapid and intense decarbonisation of society. The IPCC report states that individual actions have tremendous potential that is currently tapped into to encourage people to lead low-carbon lifestyles in the short term through changes in the transport, industry, construction and food sectors.

Document I

Final General Report 2021

2. Measures and tools to achieve the targets of prevention, reuse, recycling and recovery pursuant to Article 225, paragraph 1 of Italian Legislative Decree 152/2006

This chapter covers the initiatives/measures that have been targets set by the legislation (Article 225 of Italian Legislative Decree 152/2006):

- Prevention of the formation of packaging waste;
- Growth of the proportion and quantity of recyclable packaging compared with the quantity of non-recyclable packaging;
- Growth of the proportion and quantity of reusable packaging compared with the quantity of non-reusable packaging;
-
- Improvement of the characteristics of packaging to allow it to undergo several trips or rotations under normally predictable conditions of use;
-
- Meeting recovery and recycling objectives.

CONAI promotes a set of initiatives that aim to limit the environmental impact of packaging and packaging waste and to improve end-of-life management. These measures are either structural, linked to both the leveraging of the contribution as a first driver of prevention, and the role given to CONAI by the legislator (such as the Framework Agreement for quality separate collection), or they are awareness raising and incentive measures, aimed at consortium members and falling within the scope of the project evocatively titled “Thinking about the Future”⁷.

To frame the measures taken by CONAI to achieve the targets within the context of the possibilities and instruments that the legislation allocates to the Consortium, a table listing the specific activities/measures for each target is provided below. As you can see, there are some

⁷ This project consists of a set of activities aimed at sharing between companies the voluntary actions that might reduce environmental impact of packaging produced and/or used, reward virtuous packaging experiences by promoting the investments made by companies, and making a set of tools available to support the packaging design stage, to identify the ideal synthesis between functionality and environmental impact.

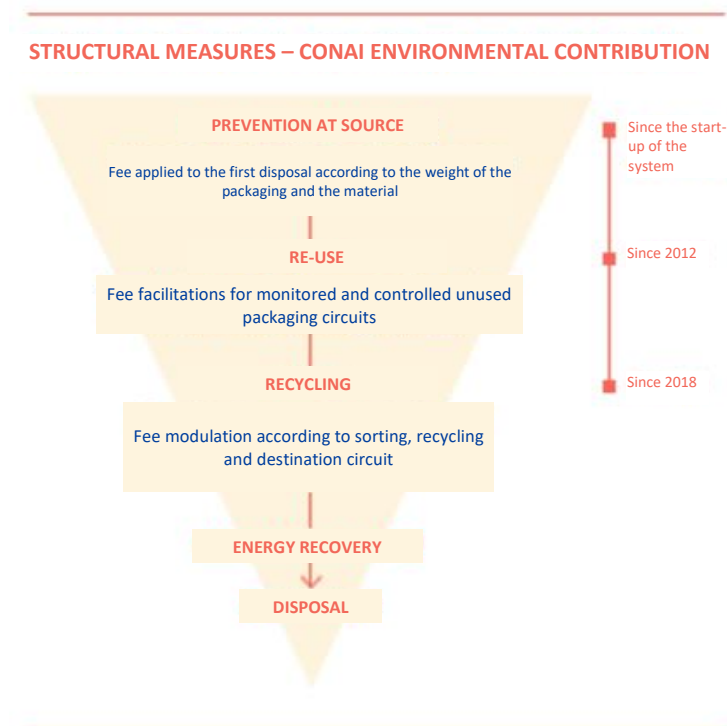
measures that can be linked with almost all targets and these will be outlined and contextualised with regard to specific issues below.

Targets Article 225, paragraph 1 of Italian Legislative Decree 152/2006	CONAI measures
a) Prevention of the generation of packaging waste;	<ul style="list-style-type: none"> – Fee positioning – E PACK – “Saving raw materials” and “Use of recycled material” drivers, Essential Requirements Guidelines – Eco-design call – ReMade in Italy
b) Growth of the proportion and quantity of recyclable packaging compared with the quantity of non-recyclable packaging;	<ul style="list-style-type: none"> – Modulated fee – E PACK – “Facilitating recycling activities” driver and Essential Requirements – Design for recycling – Eco-design call – EcoD Tool
c) Growth of the proportion and quantity of reusable packaging waste compared with the quantity of non-reusable packaging;	<ul style="list-style-type: none"> – Fee facilitation – E PACK – “Reuse” driver and Essential Requirements Guidelines – Eco-design call
d) Improvement in the packaging characteristics with the aim of allowing this to withstand several trips or rotations in normal foreseeable conditions of use;	<ul style="list-style-type: none"> – Fee facilitation – E PACK – “Reuse” driver and Essential Requirements Guidelines – Eco-design call
e) Meeting recovery and recycling targets.	<ul style="list-style-type: none"> – Development of quality separate collection – E PACK – Tools for environmental labelling of packaging – Local communication – Research and development in technology – Commercial and industrial packaging platforms

The main measures implemented and completed in 2021 with regard to each target are described below. Starting with the issue of prevention in the broadest sense (generation of waste, recyclability and reuse), there are some measures that are across-the-board with regard to three areas of interest that are listed first and not linked to any single target.

The structural preventative measures include the **definition of the CONAI environmental contribution** which is based on the preferability of the means of management as derived from the hierarchy of the “inverted pyramid”.

Structural measures – CONAI environmental contribution



The principle of prevention is inherent to the application of the fee since the start-up of the system. The environmental contribution is in fact applied at the time of the **first disposal**, using the formula euros per tonne; therefore, the lighter the weight of the packaging, the lower the fee owed.

If the packaging is reusable, it may come under the **facilitated formulas for liability to the environmental contribution** determined in 2012⁸, that allow a reduction or suspension of the fee. Also, a logic for modulation of the fee, according to actual sortability and recyclability was introduced in 2018; this logic anticipated what was envisaged by the Circular Economy Package of Directives on the issue of “extended producer responsibility”. The fee modulation has been:

- Initially introduced onto to the plastic packaging supply chain, whereby the full diversification of the fee came into effect in 2019, the year in which the lists of packaging

⁸ For further information, please see/download the documents in the downloads section of the website at www.CONAI.org.

and their respective fee levels were strengthened and refined, so as to make it even more relevant and reliable;

- extended to the paper packaging supply chain for initial application from 2019, which concerned what is known as “cellulose-based packaging suitable for containing liquids” and which was extended to the other types of cellulose-based composite packaging other than containers for liquids (see section 2.2).

Among the awareness raising and incentive measures in the “**Pensare Futuro**” project, E PACK is the online service that was set up in May 2013 and which provides a dedicated email address, epack@conai.org, to support companies and associations in producing packaging with a reduced environmental impact through the provision of information and documents regarding the mandatory and voluntary environmental labelling of packaging, the essential requirements defined by Directive 94/62/EC, recyclability, free tools that CONAI provides for companies for design for recycling and the promotion of actions that can be implemented by companies to improve the environmental performance of their packaging pursuant to and in accordance with mandatory provisions.

CONAI TOOLS FOR ENVIRONMENTAL LABELLING OF PACKAGING

On 11 September 2020, issue no. 116 of the Official Journal of the Italian Republic published Legislative Decree no. 3 of September 2020, which implements EU Directive 2018/851 on waste and EU Directive 2018/852 on packaging and packaging waste.

The decree introduced some significant changes, adding the requirement for environmental labelling for all packaging placed on the market in Italy.

The wording of the legal text, however, left room for a number of uncertainties about its interpretation, from both a technical and organizational point of view, leading to much concern from companies, which began to request support from CONAI through channels such as epack@conai.org, which helps companies on these issues by providing guidelines and dedicated support.

With the aim of clarifying the issue and offering a supportive tool for companies, CONAI promoted the drafting of a *guideline on the environmental labelling of packaging*, which also involved a working group dedicated to managing the most critical issues with UNI,

Confindustria and Federdistribuzione. The document was subject to a public consultation, which was very well endorsed, and at the end of which, the consolidated document was published. Over time, the document was revised in the light of discussions with companies and associations, as well as regulatory updates on the matter.

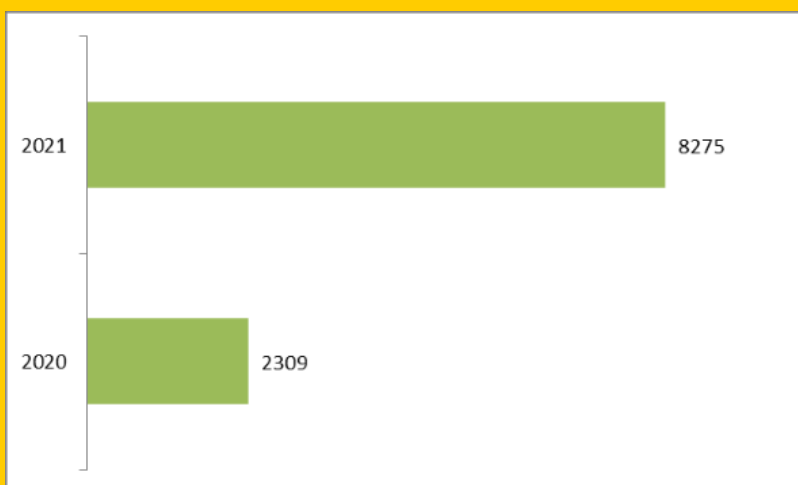
CONAI added a set of useful tools and initiatives to the guidelines to support companies in complying with the labelling requirements, in particular, the e-tichetta (e-labelling) tool, the website dedicated to the environmental labelling of packaging, webinars and training sessions by the CONAI Academy as described below.

The e-tichetta (e-labelling) tool

Given the perceived importance of the issues by companies, even before the introduction of this new requirement, CONAI had already been working for some time on the development of a dedicated tool for environmental labelling – the *e-tichetta* tool available at the site <http://e-tichetta.conai.org>, useful for identifying content for required and voluntary environmental labelling.

Over **12,800** users are subscribed to the tool, of which over 8,200 registered in 2021.

Registrations with the e-tichetta tool



The site www.etichetta-conai.com

To provide support to companies with a set of modulated tools, CONAI has also developed a **website** that is entirely **dedicated to the topic of environmental labelling**, providing:

- a set of useful documents, including guidelines on mandatory and voluntary labelling;
- over **240 useful FAQs**,
- a **checklist** on shared responsibility,
- the collection of CONAI Academy **webinars** and on the topic of environmental labelling;
- dozens of **good ideas** for environmental labelling intended to serve as an example and for inspiration for companies that are currently planning their environmental labels;
- a list of **139 experts on labelling** that companies can turn to for direct consultation.

CONAI Academy for Environmental Labelling

To provide training and information for companies and associations concerned, CONAI has put forward **14 webinars** on this issue in the CONAI Academy throughout the past year.

In particular, the **CONAI Academy Week** held in late September 2021 – a week spent exploring the issue in depth, organised in partnership with 21 parties made up of associations and packaging material consortia, during which **9 webinars** were organised, each dedicated to one of the main industry sectors (food, chemicals, cosmetics, consumer goods, distribution, packaging production), attended by **6,768** members.

Alongside the CONAI Academy Week, the *Call for good ideas*, was launched – an initiative aimed at putting together some best practices for environmental labelling developed by companies and which represent virtuous examples, both in terms of content and from an operational point of view. Thanks to this initiative, **64 best practices for environmental labelling** were put together, and a dedicated section was added to the website.

In addition to the informative activities via E PACK, during the year, CONAI has made a strong commitment to training and the requests for in-depth analysis of issues related to the circular economy and eco-design for packaging, by companies, universities and training providers. In 2021 CONAI shared its know-how on these issues with **8 lectures** in the context of training courses and industry masters', as well as on other occasions during meetings with companies working in the field of conferences, webinars or dedicated events.

By means of the E PACK service, the “**CONAI eco-design drivers**” are promoted, i.e., eco-design actions that companies can take to reduce the environmental impact of their packaging throughout its life cycle and that are enhanced and rewarded through the *Bando CONAI per l'eco-design* described below.

ECO-DESIGN DRIVERS PROMOTED BY CONAI



Saving raw materials

Limiting consumption of raw materials used in creating packaging and the consequent reduction in weight, with the same packaged product and performance.



Re-use

Design of packaging so that it is able to complete a minimum number of movements or rotations during its life cycle and for a usage identical to that which it was designed for.



Use of recycled material

Replacement of a portion or all of the virgin raw material with recycled/recovered material to contribute to the reduction of usage of resources.



Optimisation of logistics

Improvement of storage and display operations, optimisation of loading onto pallets and vehicles and refining the relationship between primary, secondary and tertiary packaging.



Facilitation of recycling activities

Simplification of the packaging recovery and recycling stages, even of organic recycling, such as the sortability of the various components (e.g. labels, closures and dispensers etc.).



Simplification of the packaging system

Integration of one or more functions into a single packaging component, removing an element and thus simplifying the system.



Optimisation of production processes

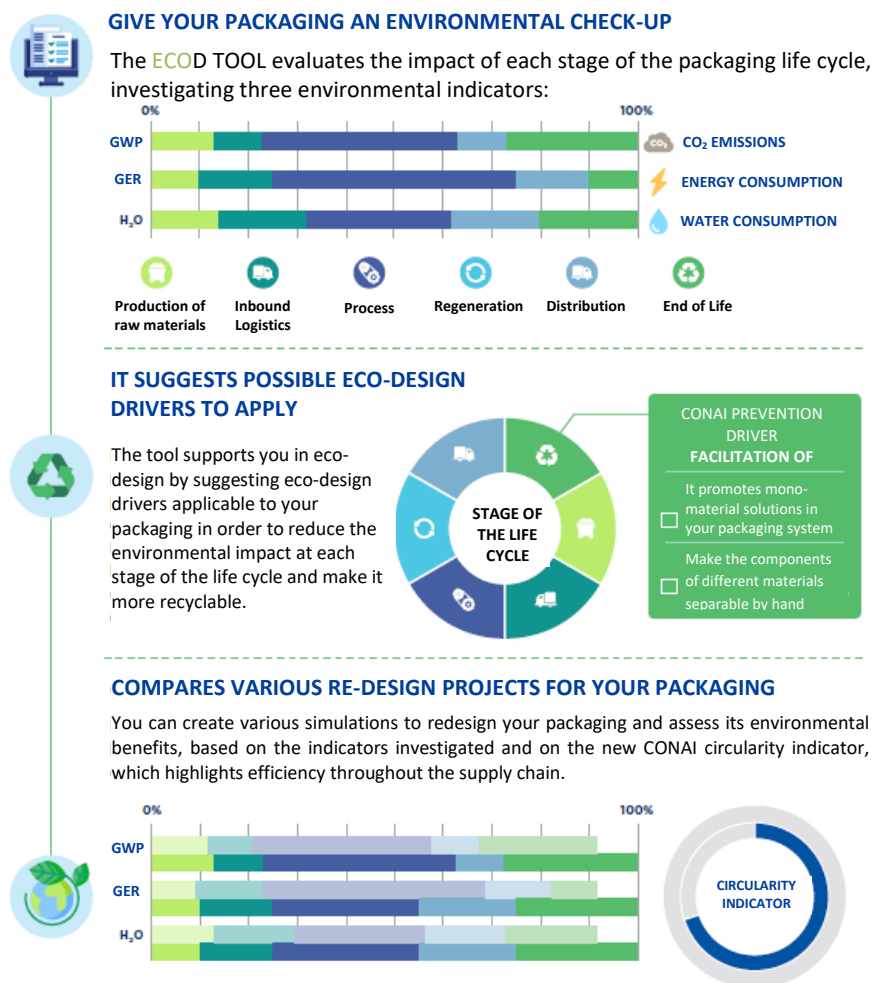
Implementation of innovative processes for packaging production that can reduce energy consumption per unit produced, reduce manufacturing wastage or reduce the use of manufacturing inputs in general.

CONAI also promotes observation of the **essential requirements** defined by Directive 94/62/EC according to which companies are legally obliged to place on the market packaging that is recoverable and with minimal environmental impact.

In this regard, in partnership with UNI – Ente Nazionale Italiano di Unificazione (Italian National Unification Body) the document *Imballaggi-Requisiti essenziali definiti dalla Direttiva 94/62/CE sugli imballaggi e i rifiuti di imballaggio [Packaging - Essential Requirements defined by Directive 94/62/EC on Packaging and Packaging Waste]* was drawn up, which summarises European technical regulations and standards related to compliance with essential requirements. Additionally, pursuant to Article 197, paragraph 1 of Legislative Decree 152/2006, control regarding compliance and compliance with these requirements is the responsibility of the provinces.

CONAI has also enhanced the free tools available for companies for the design of packaging with a lower environmental impact. In February 2020 the **EcoD Tool** was made available via the site www.ecotoolconai.org – EcoD Area. The EcoD tool is a free tool for packaging eco-design, based on the approach of the simplified LCA, available to consortium member companies and which suggests improvements during design and allows companies manufacturing and using packaging to assess the environmental impacts linked to various stages of the life cycle for different packaging solutions.

In addition to the indicators already investigated, the comparative analysis of the EcoD Tool is enhanced by a fourth indicator that was set up during the year: a new **indicator of the circularity of packaging**, developed by CONAI in partnership with Life Cycle Engineering Spa and the Department of Civil and Environmental Engineering of the Polytechnic University of Milan.



In the two years since it first became operational, the EcoD Tool has enabled 140 users and about 500 records have been completed.

Once sustainable packaging has been designed and put on the market, companies can take part in the **Bando CONAI per l'eco-design**, the incentive initiative that has been collecting and promoting the experiences of companies that have invested in prevention and eco-design activities to make their packaging increasingly environmentally sustainable since 2013. Through voluntary participation in the Call, companies that have created packaging with reduced environmental impact are given financial incentives⁹, with the aim of continuing efforts to take actions aimed at improving the environmental performance of their packaging. Specifically, the call rewards packaging solutions put on the market in Italy that have adopted one or more eco-design drivers compared with the previous version (see box above), and which

⁹ For the evaluation of cases of virtuous packaging presented by companies, the appropriate Regulations that are posted on the website conai.org are referred to.

have led to a reduced environmental impact evaluated through the CONAI Eco Tool, through simplified LCA analysis.

The measures described so far form the basis of the prevention measures implemented by CONAI, which have remained steady over time and within which the most specific activities are included, which allow on the one hand, the contents defined by the regulations to be complied with, and on the other, the actions taken by companies to be developed and measured, without seeking to be representative given the voluntary nature of such initiatives.

The names of CONAI's prevention activities do not change but rather, the content does, at the level of support for companies, innovation with regard to what has been done, and functionality with regard to the needs considered appropriate for continuous improvement.

In the area of data refinement, collaborations continued with Prometeia¹⁰ to develop and implement specific models for calculation of the forecasts for placement on the market. Given the centrality of the evolution of second raw material prices, during 2021, the twice-monthly monitoring between CONAI and Prometeia was consolidated to survey the main price lists of virgin and second raw materials for packaging. The Observatory proved itself to be a useful supporting tool for the decisions on the review of the values of the fee.

2.1 Prevention of the generation of packaging waste

Conai Environmental Contribution Positioning.

For each packaging material, CONAI “*determines and charges to consortium members (...) the fee known as the CONAI environmental contribution*” (Article 224, paragraph 3 (h) of Italian Legislative Decree 152/2008 as amended), which is the main form of financing to share fees for the recycling and recovery of packaging disposed of to separate collection among producers and users.

As mentioned above, the fee is levied at the time of the so-called “**first transfer**”, i.e. the time of transfer, even temporary and for any reason, within the national territory, of the finished packaging, carried out by the last producer or empty packaging trader to the first user, other

¹⁰ Consultancy, software development and financial research company.

than the empty packaging trader, or of the packaging material, carried out by a producer of raw material or semi-finished products to a self-producer who is or claims to be such.

The formula euros per tonne is one of the structural/ system prevention initiatives, since it encourages the stakeholders involved – producers and users of packaging – to find solutions for environmental optimisation of packaging, including to reduce its economic impact (e.g., the lighter the packaging the less fee will be payable).

This structural measure provides a response to the prevention of the generation of packaging waste set out in Article 225, paragraph 1 (a) of Italian Legislative Decree 152/2006 and subsequent amendments.

In addition, the promotion of virtuous cases on the CONAI website (<https://www.conai.org/prevenzione-eco-design/casi-di-successo-conai/>) and collected through the *Bando CONAI per l'eco-design* mentioned above are examples for companies involved, which are thus incentivised to research possible solutions to improve the environmental performance of their packaging in the context of saving raw material.

Lastly, the promotion of the “Use of recycled material” driver also contributes to keeping the use of resources to a minimum. For the circular economy and the efficient use of resources, this also allows for second raw material from recycled packaging to be used where possible to produce new packaging. CONAI can take action indirectly on this issue, since the use of recycled material depends on numerous factors concerning, for example, the performance of the packaging, regulations on contact with foodstuffs, the availability of second raw materials (MPS) on the market and the price of these.

CONAI plays an important role as founder of the ReMade in Italy Association, along with the Milan Chamber of Commerce, the Lombardy Regional Government and waste disposal firm AMSA Spa (Azienda milanese per i Servizi Ambientali [Milan Environmental Services]). ReMade in Italy promotes the certification¹¹ of the traceability of recycled materials present in products and the benefits that use of recycled material provides.

¹¹ For further information, visit <http://www.remadeinitaly.it/>

2.2 Growth of the proportion and quantity of recyclable packaging compared with the quantity of non-recyclable packaging

The fee modulation, which became effective in 2018, was a significant step already driven by the new Circular Economy Directives that require modulation of environmental contributions for EPR systems according to reparability, reusability and recyclability. With particular reference to modulation according to recyclability, CONAI has introduced an approach that is already in line with the provisions of the Directives for the paper and plastic packaging supply chains.

The results of the fee modulation for plastic and paper packaging continued to be monitored in 2021 and the updating of the lists of packaging was facilitated by the support of the dedicated working group (14 meetings in 2021), on the basis of its sortability and recyclability. In addition, evolutions in fee modulations for plastic and paper packaging to apply from 2022 were defined during the year, also following presentations and discussions with the associations of packaging manufacturers and users.

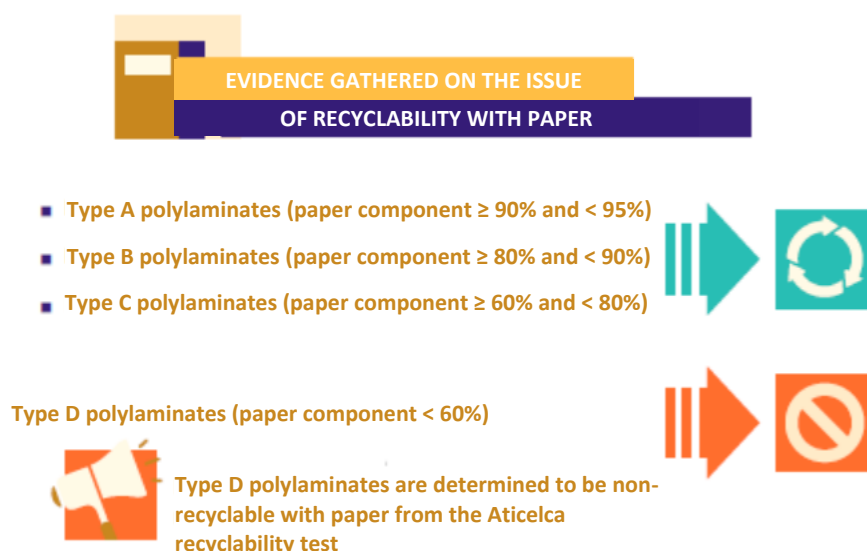


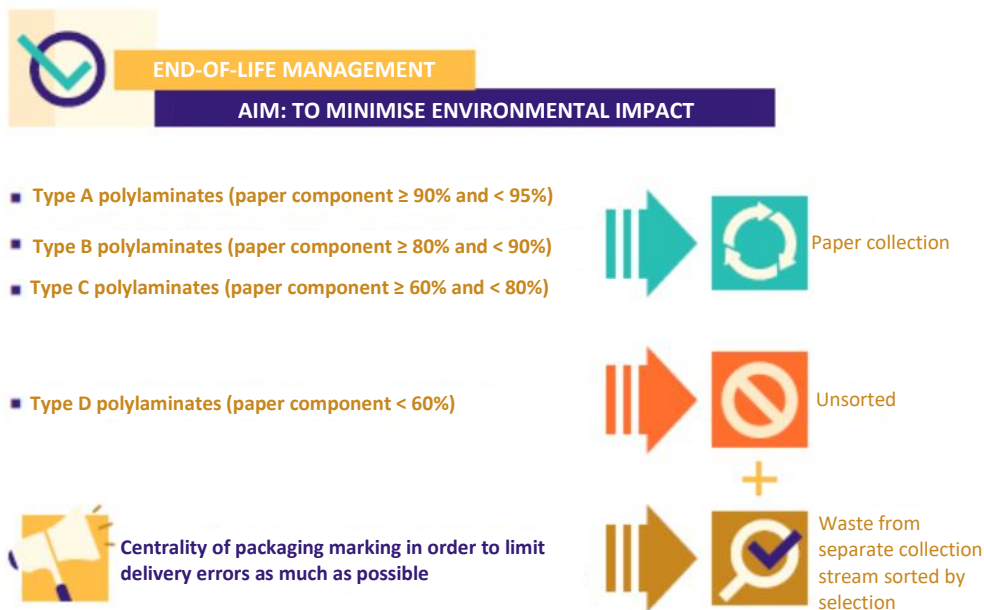
In fact, the **modulation of the environmental contribution was extended to all composite paper-based packaging other than containers for liquids**, with an approach that involved

an increase in the fee (extra fee) for the types that cause complications, compromise recycling and increase residual waste during industrial recycling.

The new modulation, which was the subject of study for about a year, came into force on 1st January 2022 and involves division of mainly paper-based composite packaging into four types according to the weight of the paper component out of the total weight of the packaging:

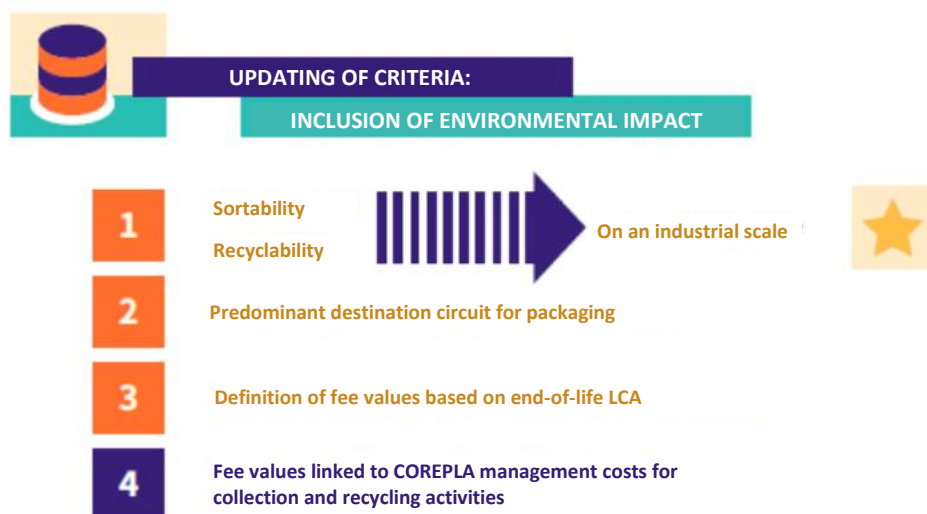
- The first two types, A and B, with a paper component greater than or equal to 90 and 80%, respectively;
- The third, type C, qualifies the packaging in which the paper component is greater than or equal to 60% and less than 80%. The recycling operations for these packaging types are complex and costly: out of 100 kg of packaging, more than 60 kg is residual waste that is not recyclable with current technology;
- The fourth type, D, is for composite packaging in which the paper component is less than 60% – a percentage at which the recyclability of the packaging is compromised and nullified, with obvious consequences that impact the environment. In fact, during the recycling process, 100 kg of this packaging produces more than 85 kg of dry waste and almost 150 kg of wet waste to be disposed of in landfill, after having consumed water and electrical energy. Therefore, since this packaging is not recyclable with paper and cardboard, the companies that produce and use it are asked to suggest on the label that it be disposed of with unseparated waste collection, in order to minimise the environmental impact linked to its end-of-life management.





With regard to **fee modulation for plastic packaging**, activities involved revising and updating the criteria and logic by linking the values of each Level not only to the recyclability and destination circuit of the specific types of packaging, but also to the operating costs, thus adding the specific chain deficit (or net operating cost) for each macro-type of packaging as one of the factors for defining the individual fee values per Level.

Fee modulation has evolved entirely by considering the evolution of the concept of "recyclability" at EU level that is going in the direction of actual recycling and not potential recycling, confirming the criteria behind fee modulation adopted so far.



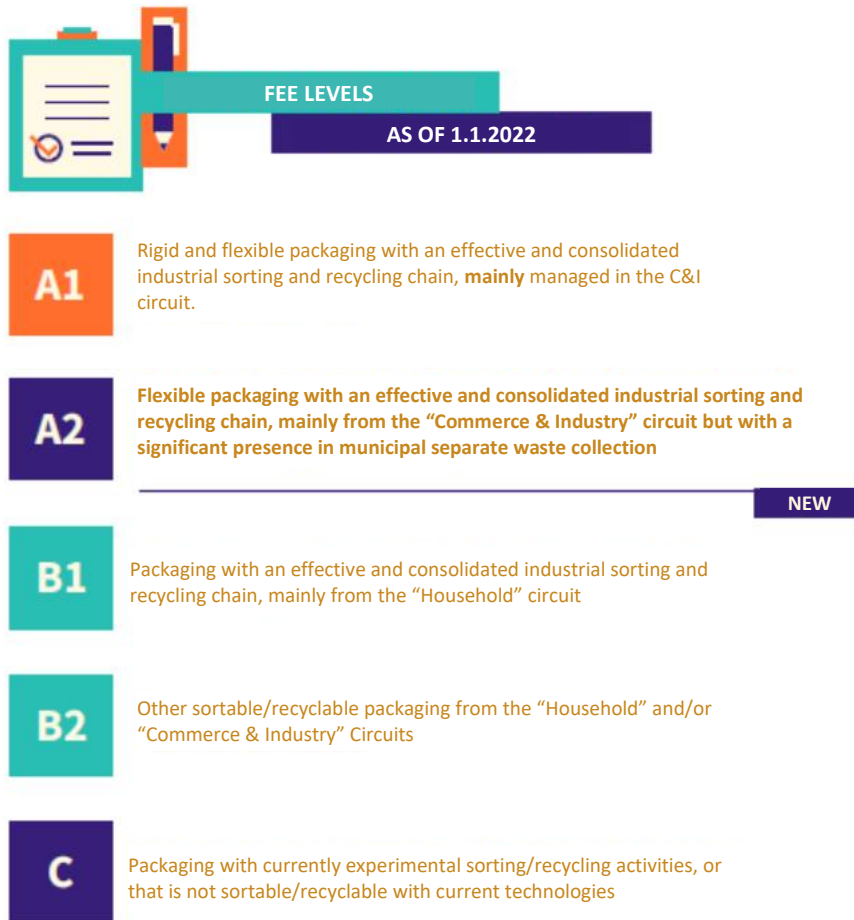
The introduction of the additional criterion related to the economic factor led the Board of Directors to define a new fee level and reallocate some items within the levels on June 24, 2021.

In particular, in light of the increasing presence in the municipal separate collection of some packaging streams typically from C&I (commerce and industry) circuits, in order to spread the resulting management costs more correctly, Level A was divided into 2:

- A1 – Rigid and flexible packaging with an effective and consolidated industrial sorting and recycling chain, mainly managed in the C&I circuit.
- A2 – Flexible packaging with an effective and consolidated industrial sorting and recycling chain, mainly from the C&I circuit but with a significant presence in municipal separate waste collection.

This is the start of a path of gradual refinement of the fee modulation decided by the Board of Directors at the time of the revisions of the fee values and aimed at reinforcing the concept of recyclability and the criterion of costs to ensure recycling, starting with a more detailed analysis referring to the packaging currently assigned to Level B2, the most heterogeneous. In fact, for the packaging of this Level, the new operational lists from 2022 involve segmentation according to the reason for placing it in B2, even if equal to the fee:

- Packaging with different levels of sortability and recyclability merged for simplification into one single category;
- recyclable packaging recently placed on the market;
- packaging for which recycling is costly, and/or from which lower quality second raw materials are obtained;
- packaging with a recycling chain that is being consolidated and developed.



Also as a result of the introduction of the economic parameter, CONAI’s Board of Directors of October 2021 updated the previous decisions in light of the continuation of the trend of improvement in the values of transfer of materials for recycling beyond expectations, considering the need for there to be periodic verifications (approximately quarterly) of the appropriateness of the fee values for the different levels to the relevant operating costs, especially in this phase of strong volatility in the lists of second raw materials.

To further support companies that intend to take action in packaging recycling at the design stage, in 2016 the web platform “**Design for recycling**” was created, available at www.progettarericiclo.com in Italian and English, and where CONAI’s guidelines on packaging design for recycling can be found, created with the help of the main Italian universities in the field of design and with Packaging Material Consortia.

The design indications in the guidelines are based on the description of industrial processes that characterise packaging waste processing operations: collection, sorting and recycling.

Through the analysis of these stages, readers are guided to understand which aspects need to be considered during the design stage so that packaging is compatible with existing processes. With this in mind, the guidelines provide useful suggestions and tips intended to stimulate innovation and creativity in design and of developing packaging solutions that represent the best synthesis of functionality, performance, requirements and compatibility with recycling processes. In fact, it is essential to give absolute priority to the numerous functions that packaging has to fulfil, primarily ensuring that the product arrives intact to the end consumer, avoiding it being disposed of prematurely. There are also communicative and informative functions after this primary function, as well as those connected to prolonging the shelf life of the product, which is a topical and sensitive issue from both a social and an environmental perspective. Innovative solutions that also guarantee the recycling of the materials that the packaging is made from can therefore be devised on a par with performance.

Design for recycling, which seeks to be a forum for ongoing discussion on design of packaging for recycling, allows users from different sectors and categories – packaging manufacturers and users, universities and centres for research, environmental consultants and experts, associations, consortia, and players in the waste management chain – to participate, via registration on the platform, in the public consultation of documents aimed at collecting contributions from the entire chain for shared and updated guidelines.

The project involves guidelines being drawn up for each of the six packaging materials; the guidelines currently available concern packaging in plastic – the result of contributions from IUAV University of Venice and the support of COREPLA; in aluminium – which involved the Turin Polytechnic Department of architecture and design and the support of experts from CIAL (Consorzio Nazionale Imballaggi Alluminio [National Aluminium Packaging Consortium]); and in paper – drawn up with the help of the “Giulio Natta” Department of Chemistry, Materials and Chemical Engineering of the Polytechnic University of Milan and professionals from COMIECO (Consorzio Nazionale Recupero e Riciclo degli Imballaggi a Base Cellulosica [National Consortium for the Recovery and Recycling of Cellulose-Based packaging]).

DESIGN FOR RECYCLING

Promotion of a specific web platform (www.progettarericiclo.com) focusing on design for packaging recycling guidelines.

CONAI

Guidelines to facilitate the recycling of packaging made predominantly from **paper**

published in 2020
Polytechnic University

CONAI

Guidelines to facilitate the recycling of **aluminium** packaging

published in 2018
Polytechnic University

CONAI

Guidelines to facilitate the recycling of **plastic** packaging

published in 2016
Iuav University of Venice

The guidelines are also a voluntary measure available to and in support of companies wishing to design packaging solutions to replace those that are currently not recycled at the end of their useful life. Once placed on the market, these solutions can be reported and enhanced by the *Eco-design Call* also to disseminate them among companies and create the critical mass necessary for recycling plants.

2.3 Growth of the proportion and quantity of reusable packaging waste compared with the quantity of non-reusable packaging;

With the aim of achieving packaging waste management that is more environmentally sustainable, CONAI has dedicated special attention to packaging that is structurally designed to be used for several years, for which to reserve facilitated or simplified formulas for the application of the Environmental Contribution, with the continued involvement of business associations and companies representing the industrial or commercial sectors concerned from time to time.

Since the start-up of the CONAI – Packaging Material Consortia system, in fact, full exemption from the environmental contribution is contemplated:

- for reusable packaging used for handling goods (from raw materials to finished products) as part of a production cycle, within an industrial plant or logistics hub. From 2012 this exclusion was then extended to the movement of goods between multiple local

- units (production sites, logistics hubs, retail outlets) belonging to the same legal entity or industrial or commercial group/network;
- for gas containers of various types, if refillable.

Reusable bags (known as “cabas” bags) and “trolley bags” for the supermarket have benefited from similar complete exemption from the fee since 2011, since they have the same essential functions.

For the following types of packaging, significant fee discounts are applied through a mechanism of reduction in the weight subject to the CONAI environmental contribution:

- wooden pallets placed back on the market (used, repaired or simply sorted) by operators in the sector that carry out repair activities albeit secondary ones (40% reduction since 2013);
- wooden pallets (new or placed back on the market) if produced according to specifications as coded within “controlled” production circuits (60% reduction from 2013 to 2018). With the aim of further facilitating the reuse of such pallets, the percentage of reduction increased from 60% to 80% from 2019 and rose further to 90% from 2022;
- reusable packaging (used in particular circuits or controlled and monitored return systems) such as glass bottles (85% reduction), plastic crates and baskets (93% reduction) since 2012.

For all reusable packaging used in precisely controlled return systems (hired or through commercial forms with transfer of property without ownership), since 2012 there has been another form of facilitation (alternative to the others) through the possibility of suspending the payment of the environmental contribution until the packaging itself finishes its reuse cycle or is otherwise dispersed or out of the circuit.

A different facilitation was reserved for industrial packaging, such as multi-material (steel-plastic-wood) tanks, plastic or steel drums, if they are regenerated and put back on the domestic market.

In this case, the facilitation consists of both a significant simplification of the formulas for applying and declaring the environmental contribution (on the number of pieces transferred rather than on the weight of the individual components and their accessories), and through the

simultaneous payment of periodic fees from the relevant packaging material consortia to the regenerators/recyclers for the activity carried out by them on the same packaging recycled/recovered.

Finally, it is worth pointing out that the simplification working group¹² constantly analyses types or packaging streams deserving of facilitations or simplifications, focusing in particular on reusable packaging for which to grant new discounts or extend existing ones.

The circulars pertaining to the aforementioned main procedures can be found in the Appendix and are available at www.conai.org.

2.4 Improvement in the characteristics of packaging with the aim of enabling it to withstand several trips or rotations in normal foreseeable conditions of use

In order to map practices for reuse of packaging in Italy, CONAI has in recent years promoted the mapping of the types of packaging involved and the main sectors of use through an Observatory for reuse courtesy of the Polytechnic University of Milan and published in the Study and Research section of the site [conai.org](http://www.conai.org) (http://www.conai.org/wp-content/uploads/2020/05/Mappatura_Riutilizzo.pdf). The study showed how it is not always possible to obtain data, also because they are often considered to be confidential by owners, and since this information is not subject to annual updating.

The Observatory is complemented by LCA analyses which CONAI has intended to promote on some specific types of reusable packaging aimed at assessing the environmental impacts associated with the life cycle and the regeneration and restoration systems provided for multi-material tanks, steel drums for chemical and petrochemical products, reusable plastic crates with removable sides, and returnable glass bottles, all assessed according to the number of uses. These studies, also carried out by the Polytechnic University of Milan with the direct involvement of relevant companies and associations, represent a unique scientifically-based source of information on the topic of reuse and are also available in the section on studies and research on the website [conai.org](http://www.conai.org)

¹²This is the council working group which aims to further work on the qualification of packaging for different types of products and assess the need for less complex and costly procedures for fulfilling consortium obligations and their application, in particular for managing the CONAI Environmental Contribution, including through specific flat-rate approaches for sectors or particular packaging streams, on an equitable basis and in accordance with the law, articles of association and the CONAI Regulations.

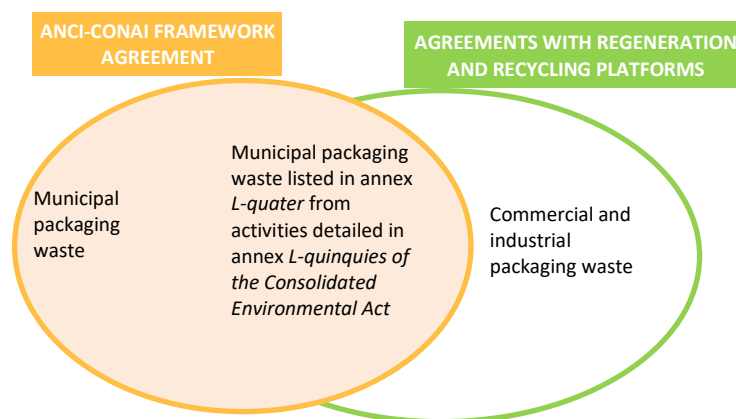
The context of reporting is certainly where it will be necessary to intervene mostly to be able to fully comply with the requirements of the new European system of reporting.

Main considerations for materials supply chains for the purposes of future studies and surveys aimed at reporting.	
Plastic	<ul style="list-style-type: none"> • Especially for some specific industry sectors, there are systems for rental or pooling for reusable packaging, such as plastic crates/bins and pallets, and crates for fruit and vegetables, which would therefore fall under the definition dictated by Decision (EU) 2019/665. • Plastic baskets for transporting glass bottles to be returned are often delivered with the bottles themselves, thus counting as an organised system of reuse by bottling companies themselves. • Some types of reusable packaging, such as large water dispenser bottles, might fall under systems of reuse operated by the companies that market the product. Specifically, reusable large water dispenser bottles might fall under the types set out in Article 6-bis of Decision (EU) 2019/665 for the correction of the recycling targets.
Glass	<p>Returnable glass beverage bottles (mainly mineral water and beer) fall within a circuit that includes the hospitality sector (hotels, restaurants and cafés, hotel and catering services, bars) but also door-to-door trade to the end consumer. It is estimated that over 90% of glass mineral water bottles used in catering are returnable. They are also used in door-to-door household distribution. In both cases, they can be considered reuse systems, as defined by the implementing decision. Distribution is either direct, if the bottling company distributes the mineral water directly to end customers, or indirect if there is a wholesaler in between.</p> <p>Therefore, water bottles intended directly for the end consumer come under the definition of packaging for sales pursuant to Article 6-bis of Decision (EU) 2019/665 for the rectification of recycling targets.</p>
Wood	<p>Among wooden packaging, those that come under a reuse system are reusable pallets, which re-enter the hiring circuits, particularly the PerEPAL (prevention and reuse of pallets) system. Hire firms manage the pallet stock of users (manufacturing and distribution companies and logistics operators), creating collection, control, sorting and repair circuits. When wooden pallets no longer conform to standard for reuse, they thus become waste and are repaired by means of operations to prepare for reuse. Today they are already calculated for the purposes of recycling targets: the repaired part is calculated in recycling as defined by the Ruling.</p>
Steel and aluminium	<p>With reference to reusable packaging in steel and aluminium, further analysis and studies will be necessary to define whether there exist (and if so, what they are) cases in which the management of this reusable packaging occurs in systems of reuse, in which packaging undergoes several rotations without turning into waste. In particular, with regard to steel drums and multi-material</p>

	tanks, the streams mapped so far fall under administration that comes under the definition of preparation for reuse, being classified as waste, before being regenerated and put back on the market. Therefore, further investigation of these streams will be carried out in order to define whether there are any cases that may fall under systems of reuse or not.
Paper	The only types of reusable paper packaging that are mapped are octabins, cardboard boxes, and displays used within large-scale retail. Further investigation is needed to map possible systems for reuse.

2.5 Meeting recovery and recycling targets.

To achieve the recycling and recovery targets, CONAI works on several fronts by carrying out activities related to the development of quality separate collection under the ANCI-CONAI framework agreement, supporting research and development projects to recycle even the most complex packaging waste and organising events and communication campaigns locally, dedicated to the importance of separate collection for recycling. These activities are complemented by the development, by the Packaging Material Consortia, of a network that includes facilities for the processing, repair, regeneration and recycling of commercial and industrial packaging. These activities are described in more detail in the sections below.



2.5.1 ANCI-CONAI framework agreement and local activities

In 2021, the ANCI-CONAI framework agreement was also a guarantee of a destination for separately collected packaging waste and its subsequent recycling. The Agreement as known gives municipalities that separately collect steel, aluminium, paper, plastic and glass packaging waste the opportunity to sign the ANCI-CONAI agreements with the individual packaging

material consortia, either directly or via a third party delegated by them, and deliver the packaging waste collected for them. The Consortia will collect and recycle them, paying pre-defined fees to municipalities for increased charges incurred for separate collection.

The Agreement is now established throughout the country through the agreements signed with each packaging material consortium, which are the local implementation tool of the Agreement.

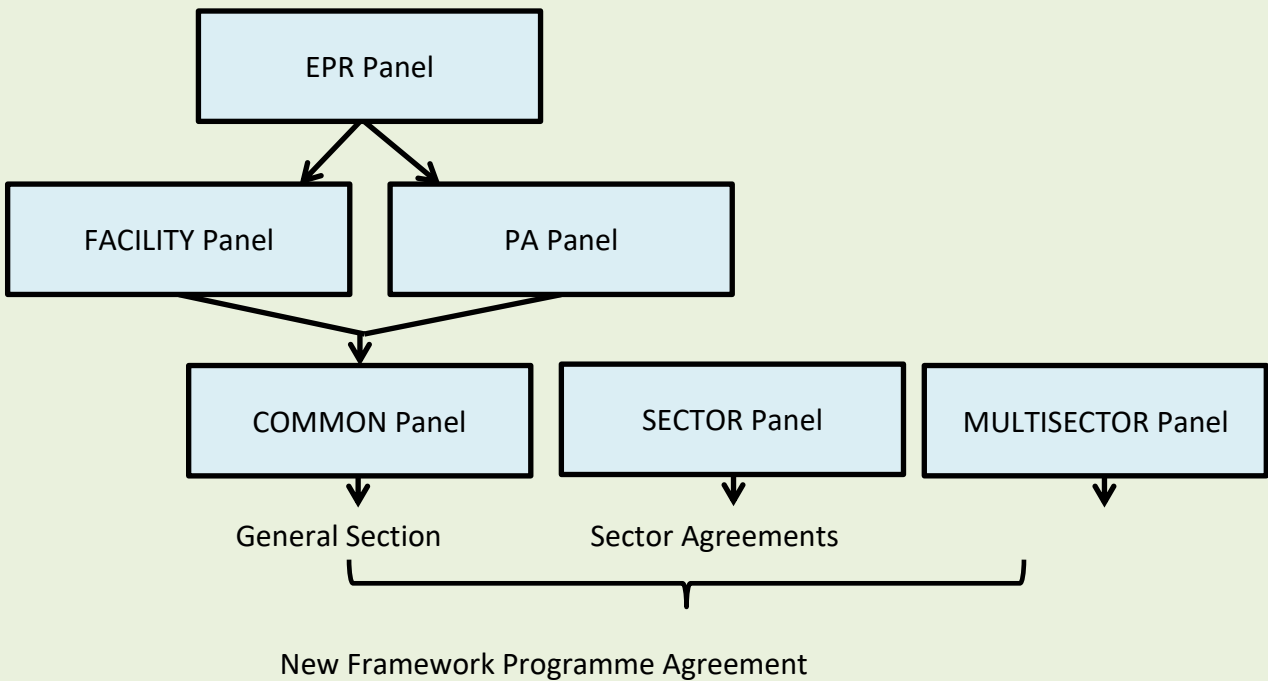
TOWARDS A FRAMEWORK PROGRAMME AGREEMENT

As a result of the enactment of Italian Legislative Decree 116/20, there was a major revision of the Framework Agreement instrument. While prior to the amendments, the text provided for the possibility of such an Agreement being signed between ANCI and CONAI, the text updated by Legislative Decree 152/06 provides for the promotion and signing of a Framework Programme Agreement by CONAI and the self-compliance EPR organizations with ANCI and the UPI, which involves various operators from the reference sector. This provision effectively introduces a paradigm shift by providing for an agreement involving a very broad representation of stakeholders, supply chain by supply chain.

In view of the fact that, pending the definition of this new framework programme agreement, the current ANCI-CONAI framework agreement remains in force, in 2021 CONAI took a course of action initiated in late 2020 to define the new Framework Programme Agreement. Initially, a panel was set up to hear the requests of packaging material consortia and the self-compliance EPR organizations, which was subsequently extended on the one hand, to the Public Administrations – ANCI, UPI and ANEA – constituting the “PA Panel” and on the other, to representatives of the sorting facilities, i.e. the plants where the material collected converges, constituting a FACILITY Panel, with the aim of hearing the respective requests, initiating mediation with those heard previously from the packaging material consortia and the self-compliance EPR organizations.

The two discussion panels therefore merged to form one single Panel, with all stakeholders present, and which was called the COMMON Panel, with the aim of achieving agreement on the general section of the Framework Programme Agreement. Simultaneously, the **Section Panels** were set up, one for each material (steel, aluminium, paper, wood, plastic, bioplastic and glass). In the section Panels, the discussion was started by the public administration and the operators from each section to define the Section Agreement and the current technical annexes. In addition, “**multi-section**” **Panels** were added to these, to agree on the specific

operational technical agreements, such as that for the collection of multi-materials, which involve operators from several sectors.



While the new Framework Programme Agreement was being defined, **Transitional Panels** were set up, to share among all stakeholders – including those who had not participated in the definition of the Agreement currently in force as they were not required to by law – to endorse the new Framework Programme Agreement appropriate transitional terms with respect to the ANCI-CONAI Framework Agreement.

To pursue the process thus outlined in 2021, **20 specific discussion panels** were set up overall, for a total of more than **80 meetings** involving **22 delegations** and over **80 delegates**.

In order to enable more efficient sharing of all documentation among the many delegates, CONAI has set up a **web portal** to enable the over 80 delegates involved to view the minutes and other documents concerning the individual Panels.

This web space, which was created for better circulation of information, has since been developed to be a point of reference and information at various levels:

- A general section, open to all, with general information in relation to the process of defining the new Framework Programme Agreement;
- A technical section, open to the members of the individual delegations, for access to specific information regarding individual panels;
- An institutional section, open to the Ministries of Ecological Transition and Economic Development, containing the approved minutes of the Panels for the definition of the new Framework Programme Agreement.

All minutes were sent to the two ministries concerned (MISE [Ministero dello Sviluppo Economico – Ministry of Economic Development] and MiTE [Ministero della Transizione Ecologica – Ministry of Ecological Transition]).

On 20 October 2021 the **ANCI-BIOREPACK technical annex** was also signed, for the delivery of biodegradable and compostable plastic packaging waste (the tables below do not yet show the data for 2021, which were of little significance).

THE NEW ANCI-BIOREPACK TECHNICAL ANNEX

Following the approval of the Articles of Association for BIOREPACK, a consortium for the management of biodegradable and compostable plastic packaging, and thus, its becoming a Packaging Material Consortium under CONAI's system, one need that arose was that of defining the specific technical annex for the management of the waste from the aforementioned packaging. Discussion were initiated with ANCI and it was necessary to work incessantly for the entire year to reach an agreement over the text, which was then formally signed on 20 October 2021.

The ANCI-BIOREPACK technical annex is a highly important innovation as it entails the extension of the CONAI–Packaging Material Consortia system, albeit partially, to also cover the collection of organic municipal solid waste.

The purpose of the technical annex is to cover the costs of collection, as well as transportation and processing, of biodegradable and compostable plastic packaging waste and foresees, as anticipated, its delivery into the collection of organic municipal waste.

The annex, as well as the other technical annexes to the Framework Agreement, foresees the possibility for the governing body for waste management, i.e., the municipality or the delegated party, to sign the agreement with the consortium BIOREPACK. The operators of the

waste service or those of only the organic waste collection service, the operators of the recycling plant to which the collection is destined, or the operator of the intermediate plant are delegable by the municipality only if they also carry out the transport to the final recycling facility.

The effects of the agreement may be applied retroactively, from 1st January 2021 for parties that requested the agreement by the end of the year.

The signing of the agreement guarantees the payment of the fees, on the share of biodegradable plastic packaging waste present in the organic collection, defined by commodity testing on the incoming material (pending the initial testing, it is hypothetically assumed that there will be a presence of packaging waste of 1.25%).

Fees for the collection are broken down according to the quality of the collection, defined by the content of non-compostable material, which is also defined by commodity testing on incoming material.

There is also a transportation fee where the final destination facility, or the intermediate facility, is located more than 25 km away. The value of this fee, where specified by the invoices, is payable in full; otherwise, it is assumed to be €0.45 per tonne for each kilometre exceeding 25 kilometres and up to a maximum of 100 kilometres.

Finally, the technical annex provides for 100 percent of the cost of organic treatment of packaging waste to be made available to local authorities quickly because of the desirability of making the resources from CONAI's environmental contribution on biodegradable and compostable plastic packaging available to them.

Alongside the technical annex, it was also necessary to sign a specific agreement related to the transition of biodegradable and compostable plastic packaging waste from the plastic packaging collection delivered to COREPLA to the organic waste collection. This need arose in view of the request by ANCI to reduce the inconvenience for those contracted with COREPLA which, after BIOREPACK's development, saw the amount of biodegradable plastic packaging waste delivered to the COREPLA collection become extraneous waste, and taking into account that their transition to organic collection had its own teething problems. Two parallel agreements were therefore signed -- one internal within CONAI's system, and one between CONAI and ANCI, which identified, only for 2021, the means by which to return an amount related to the costs of sorting and recovery for biodegradable and compostable plastic packaging waste mistakenly delivered to the COREPLA collection.

In 2021, great attention was paid to the development of the **reforming of the system of analysis** for determining the quality of the collections, with the aim of introducing greater **“impartiality”** in the analysis operations set out in the current Framework Agreement. This reform requires the identification of companies carrying out market analysis to be carried out by a third party, which in turn will be identified by an institution. For this purpose, a kind of arbitration panel formed with the support of the CRUI, the Conference of Italian University Chancellors, which, in turn, collaborated with ANCI and CONAI facilities to define the Call to identify a third party, which was subsequently issued early this year (see in-depth box in chapter 5).

Finally, the now familiar tools of the Framework Agreement for improving packaging waste collection should be recalled: support for local communication and support for the development of packaging waste collection and management systems.

Support for the development of packaging waste collection and management systems for recycling

Local activities

CONAI worked, as usual, nationwide, collaborating with local governments in management of packaging waste with the aim of encouraging the development of waste management systems geared towards recycling.

Considering the different situation in areas in the country, intervention policies are designed according to different logics:

- in the central and northern regions, and in general in areas where efficient waste management systems have been developed, CONAI favours relationships with supra-municipal institutions, in terms of general collaboration;
- on the other hand, in regions where there are delays in the organization of services, CONAI adopts an attitude geared towards dissemination and the development of efficient management systems, supporting local authorities and providing them with specific services with the aim of organising and disseminating separate collection models for packaging waste that are effective and efficient.

ANCI and CONAI have agreed, within the Framework Agreement and with specific reference to the management of packaging waste, to support the local development of the most effective and efficient methods of municipal waste management, paying particular attention to the areas of

the country that are most behind. The available resources are thus allocated to individual local projects according to the requests for support coming from the local areas, which are duly verified before being accepted. The projects submitted in 2018 were assessed on the basis of specific **Guidelines for Local and Trial Projects**

Main Activities in the Central and Northern regions of Italy

Given that there are generally efficient waste management systems running in these areas, interventions normally involve supra-municipal catchment areas and are aimed at improving separate collection streams in terms of quality rather than quantity.

Turin

In 2021 CONAI renewed its partnership with the **Municipality of Turin**, promoting the running of an awareness-raising campaign to accompany the introduction of the new collection methods (replacement of street bins with nearby controlled-access “eco-island” collection points). The communication was intended to highlight the benefits to the community of proper separate waste management. The effectiveness and appreciation of the campaign by citizens was confirmed by a specific survey commissioned by the municipality’s waste management service (Amiat SpA).

Emilia-Romagna Region

In Emilia-Romagna, CONAI’s efforts continued, with its support for **ARPA** to carry out market analysis campaigns for separated and unsorted waste as part of a study monitoring municipal waste in the region. Together with the sharing and analysis of reciprocal data, these campaigns function to evaluate the effectiveness of the collection systems adopted and in take specific actions to increase the performance of intercepting the main waste streams subject to separate collection.

In 2021, CONAI also launched a partnership with the **Emilia Romagna Region** and the regional governmental body for waste services (**ATERSIR**), aimed at the creation and development of a pay-as-you-throw scheme model, to also be implemented through a campaign to measure the waste delivered to separate collection by the different types of users (household and non-household) in the municipalities of the Emilia-Romagna Region that introduced the billing.

This pricing model aims to ensure greater control over the repercussions in terms of the rates charged to individual users, also by means of fairer division of the costs of separate collections,

Carnia and Comunità Collinare del Friuli

Also in 2021, through the in-house company entrusted with the waste collection service, **43 Municipalities in the Comunità Montana Carnica (Mountain Community of Carnia) and the Comunità Collinare del Friuli Venezia-Giulia (Friuli Venezia-Giulia Hill Community)**, asked CONAI for support for an industrial plan to implement separate waste collection, to enable the standardization of collection models and the efficiency and rationalization of the waste management service in the relevant municipal areas.

In particular, the project aims to extend the pay-as-you-throw scheme throughout the catchment area served, increasing the performance of separate collection achieved, which is already fairly good, despite the objective difficulties linked to the geomorphologic features of the area, and to introduce specific separate collection solutions – both technical (containers and services) and in terms of pricing – due to areas of natural interest, the accommodation at high altitude and the skiing facilities in the Carnia region.

Environmental Meter

Campaigns related to the Environmental Meter continued in 2021. The meter is considered a useful tool for reporting and promoting the results achieved by circular economy development models.

In particular, the results of the Environmental Counter were processed and subsequently shared for **Cortina d'Ampezzo** following the world ski championships held there in February 2021.

In addition, the Memorandum of Understanding with the **Municipality of Milan** for the implementation of the Environmental Meter is undergoing renewal, to enable the environmental impacts of separate collection and recovery activities for the main fractions of municipal waste to be recorded, with a particular focus on packaging, produced in the Lombardy capital.

2.5.2 Projects for the central and southern areas lagging

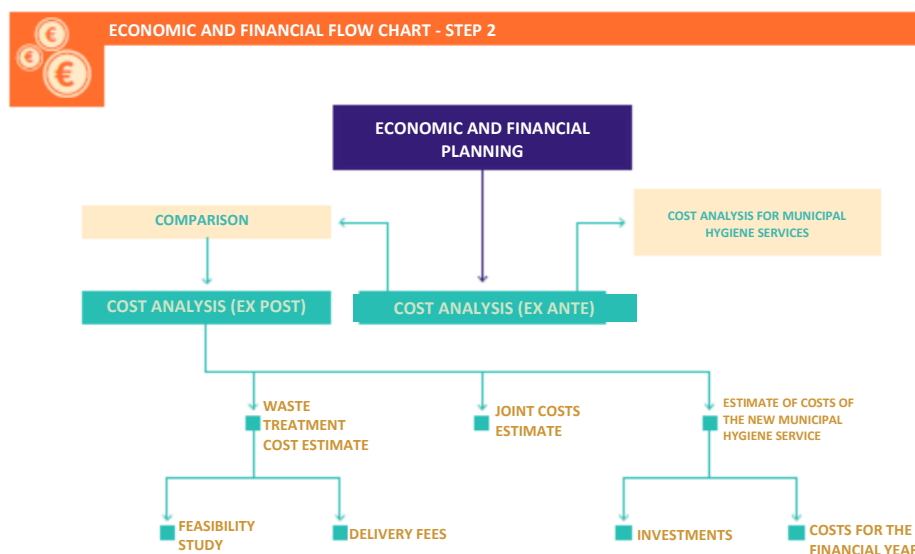
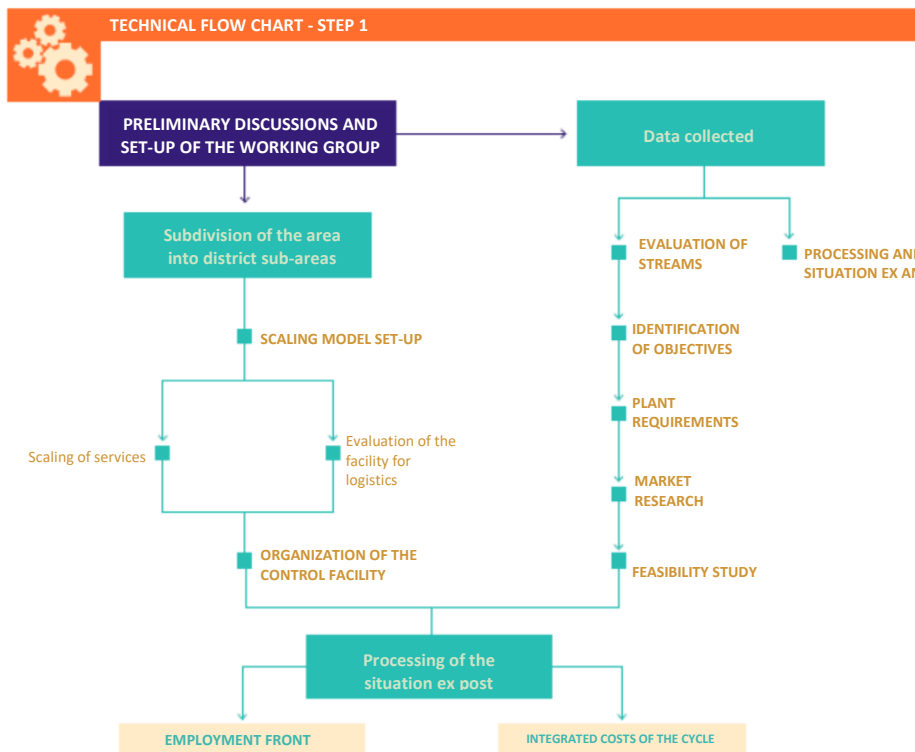
In 2021, CONAI also paid special attention to areas where the separate collection of packaging waste has struggled to achieve qualitative and quantitative standards in compliance with current regulations. The regional complexity that characterises the central and southern regions, which have a high presence of small municipalities, as well as the numerous critical issues that characterise this part of the country in terms of logistics and transportation, such as

the lack of facilities in some industry sectors, slow down more effective and efficient management somewhat. On the other hand, **more and more central and southern provincial capitals are recording separate collection rates above or in line with the average in the north**(ARO BA 8, represented by the following municipalities: Monopoli, Conversano, Mola di Bari and Polignano a Mare, Avellino, Bari, Benevento, Salerno, Catanzaro, Cosenza, Potenza, Agrigento and Trapani).

One new and absolutely relevant element that should be highlighted is a paradigm shift in the approach to management. In implementing Regional Laws 14/2016 and 14/2014 for Campania and Calabria respectively, the Municipalities started intense planning activities for integrated separate collection services, thanks to the operations of ATO - Ambito Territoriale Ottimale (local areas coordinating together to integrate services) and/or the Area Authorities with support from CONAI. This process will lead to an overall streamlining of the entire integrated waste management cycle provided that the facilities that are still lacking today can be set up. Plants that are found to be increasingly strategic for the country system in view of achieving the European targets for 2030. It is a journey shared among all parties involved which, over the coming months, will become a reference model also for other contexts with the aim of overcoming the fragmentation of management among municipalities.

CONAI's support in adapting and updating the ARERA method (MTR) should also be noted for the cost items provided for in the Industrial Plans of the individual Area Authorities.

Finally, in light of the new multi-annual planning, CONAI and the packaging material consortia agreed on the need to launch an extraordinary plan for the provincial capitals of the central and southern metropolitan cities (Rome, Naples, Bari, Reggio Calabria, Palermo, Catania and Messina) The aim is to support the municipalities and their administrators in implementing new models and systems for separate collection for packaging waste, with additional tools of the individual packaging material consortia, in addition to those already provided for by the ANCI-CONAI guidelines for local and experimental projects.



Campania region

In 2021, activities, which are still ongoing, were focused on sharing the new Framework Convention that will see the Area Authority among the signatories, in addition to the Regional Government and ANCI Campania. The aim is to systematise all the activity that CONAI has been carrying out for some time now with the regional Area Authorities.

Collaboration with the **Municipality of Benevento** (60,000 inhabitants) has been going on since February 2018 when the percentage of separate waste collection was already at 61%.

With the launch of the new service in February 2020, which saw the implementation of door-to-door service, for glass packaging as well, throughout the municipal area, the municipality exceeded the minimum target of 65%. Together with the in-house administration, the municipality has introduced new organizational models for pricing the service with the aim of rewarding virtuous citizens who separate their waste properly. For these aims, support was also launched in March 2020 for the trial “tariffa puntuale” (pay-as-you-throw scheme), and related communication campaign on a pilot district of the city with about 2,800 users, in order to improve the quantity and quality of packaging waste through a reduction in the production of RUR (residual municipal waste) and, consequently, the cost of disposal. The project consisted of two progressive steps: a testing phase, which ended in January 2021 and involved 164 users out of 2,800, and the launch of the trial on the remainder in June, which ended in November 2021. The results of the testing phase and market analysis confirmed a significant decrease in separable waste, especially packaging, within RUR (residual municipal waste).

The support activities for the drafting of the SAD – district sub-area – Plans involving the Municipality of Benevento as provincial capital, ASIA Benevento Spa as service manager and the ATO - Ambito Territoriale Ottimale (“optimum sub-area” [local areas coordinating together to integrate services]) - will end in the second half of 2022.

The **Municipality of Salerno** (130,000 inhabitants) achieved 60% separate waste collection in 2020 – below the minimum target set by current regulations, while in the past performance had reached as much as 77% also due to the support of CONAI in the preparation of the Plan, start-up activities, and communication to the community. The decline in results is probably due, on the one hand, to the few controls and a lack of awareness-raising among citizens on the proper separation of waste upstream. Through the service manager (an in-house company in the Municipality of Salerno), collaboration was initiated so that a series of initiatives could be implemented, aimed at improving the quality and quantity of separate collection introducing, on the one hand, some corrective actions to services, such as the introduction of door-to-door collection of glass packaging and, on the other hand, a communication campaign. The activities are ongoing and the new services are scheduled to start in July 2022.

The collaboration between CONAI and **The Area Authority for Caserta** (104 Municipalities – 924,000 inhabitants), launched with the Framework Convention signed with the Regional Government and ANCI Campania in 2018, involved the Area Plan for associated management of the municipal hygiene services. In spite of the complexities due to the numerous

municipalities involved and the critical issues in the local area, the activities were focused on data collection, scaling of the collection, transport, recovery and disposal service for municipal and assimilated waste, plant feasibility scenarios for the downstream management of materials collected, and the technical, economic and financial details of the integrated service. The activities ended in 2021 with the updating of the industrial costs of the Area Plan in the cost items of the ARERA (the Italian Regulatory Authority for Energy, Networks and Environment) waste tariff method (MTR). The Area Authority renewed its request for support for the executive preparation of the Area Plan. The activities began in February 2022 and are due to finish in the second half of 2022.

CONAI provided technical support to **the Area Authority for Salerno** (161 Municipalities – 1,108,314 inhabitants) in preparing the Plan for the whole of the province, in line with the provisions of Regional Law No. 14/2016 and the guidelines for the preparation of the Area Plan published by the Regional Government of Campania. In this case, the focus was again on creating the conditions to enable the entire area to achieve plant management autonomy, guaranteeing economic sustainability, to overcome the fragmentation of services and the lack of infrastructure for managing organic and non-recyclable waste. Despite the large number of Municipalities, the Area Authority managed to streamline all the activities of the 161 Municipalities and submitted the preliminary plan to the Regional Government for it to undergo the VAS – Valutazione Ambientale Strategica (Strategic Environmental Assessment) stage. Collaboration with CONAI started in January 2020. An initial stage was completed in 2021 with the executive preparation of the Area Plan including the update of the industrial costs in the MTR cost items according to the ARERA 443/2019 decision-making procedure. The second stage will end in the second half of 2022 with the executive preparation of the SAD (district sub-area) Plans.

With the aim of monitoring the streams, the quality of collections and the margins for growth in the quantities of separate waste collection, in September 2021 a sector campaign on residual waste was carried out to quantify the types of matrices that can be measured through the consortium circuit, which involved 32 municipalities in the province, chosen from 161 with criteria shared between CONAI and the Area Authority. This will enable the Local Authority and the municipalities to carry out specific information campaigns, also targeted towards the correct separation of waste and packaging waste, in the second half of 2022.

For the **Benevento Area Authority** too (79 Municipalities – 278,000 inhabitants), the technical support activities are aimed at preparing the Provincial Area Plan. The activities initially focused on the collection and validation of data and on scaling the service, considering that the province of Benevento already performs well in terms of separate collection: 73% in 2020. The activities finished in January 2022 with the updating of the industrial costs of the Area Plan in the cost elements set out in the ARERA (MTR) method. The Area Authority requested support for the executive drafting of the Area Plan, the activities are scheduled to finish in December 2022.

CONAI supported the **Avellino Area Authority** (114 Municipalities – 415,018 inhabitants) in preparing of the Plan on a provincial scale in line with the provision of Regional Law No. 14/2016 and with the proceedings with the other Area Authorities. Data collection and validation was started in February 2020 and, despite the COVID-19 health emergency, the activities ended in July 2021 with the updating of the industrial costs in the Area Plan under cost items as set out in the ARERA method (MTR). The Area Authority considered it appropriate to proceed with the support of CONAI also for the executive drafting of the Area Plan and the validation of the PEF-ARERA MTR2 new waste tariff method. Activities are due to end in the second half of 2022.

Support activities for the **Naples 1 Area Authority** (9 Municipalities including that of Naples – 1,238,937) started in November 2019 and ended in December 2020 with the submission of the Area Plan. The collaboration focused first on technical support for preparing the feasibility study for the Municipalities of the Naples 1 ATO, with the exclusion of the city of Naples, which was submitted in March 2020, and then the drafting of the Area Plan implementing Regional Law 14/2016 which ended in December 2020. In 2021 the activities were shared for the drafting of the executive Plan for Separate Collection services and with the updating of the industrial costs of the Area Plan in the MTR cost items according to the procedure in the ARERA method.

The activities will end in the second half of 2022.

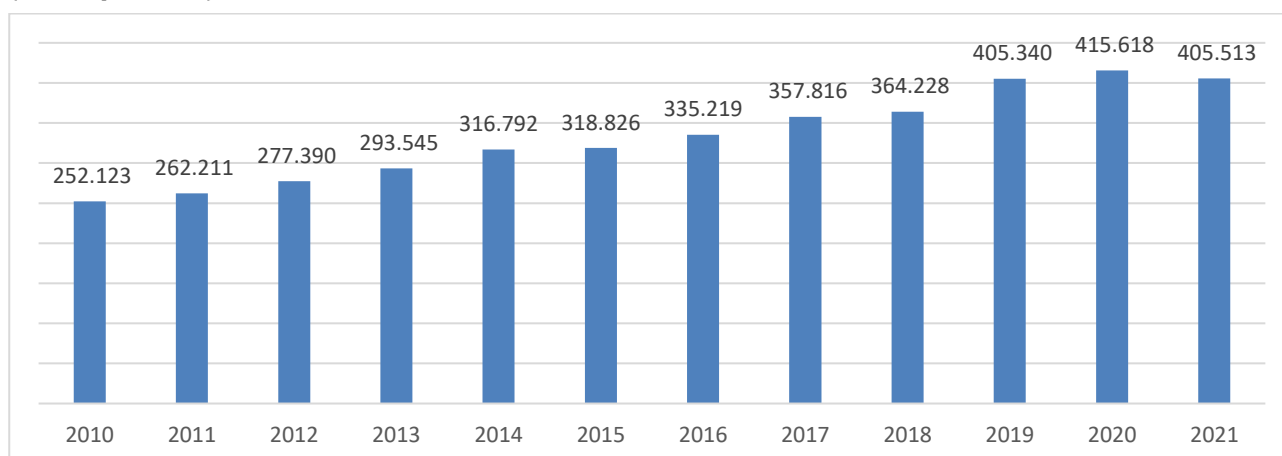
CONAI and Naples 2 Area Authority (24 Municipalities – 711,431 inhabitants) collaborated on with the aim of preparing the Integrated Services Management Plan in 2020, in compliance with Regional Law No. 14/2016 on all 24 Municipalities. The activities ended in July 2021 and the Area Authority considered it appropriate to continue collaborating with CONAI by

submitting a new request to the ANCI-CONAI Coordinating Committee for support on the executive preparation for the Area Plan which is ongoing. Activities are due to end in the second half of 2022.

On the request of the **Municipality of Naples** (922,094 inhabitants), CONAI confirmed its willingness to support the municipality and companies in the implementation of a new step-by-step collection system by sharing a multi-annual schedule of interventions. The activity has also been shared with the Packaging Material Consortia and will involve the design, start-up, communication, monitoring of streams and the traceability of collected waste.

Below is the trend in the quantities of packaging waste managed under the ANCI-CONAI Framework Programme Agreement.

(values expressed in t)



Calabria Region

The activities with the **Calabria Region** (1,851,556 inhabitants) follow the memorandum of understanding signed in November 2020 to support municipalities with a separate collection percentage of less than or equal to 25% and with a minimum population of 10,000 inhabitants. The technical support included the organization of training/information sessions for municipal administrations, support for the preparation of projects for the development of separate waste collection and packaging waste collection, the running of information campaigns aimed at citizens, the mapping of the entire system of public and private regional plants for the management of packaging waste, and the implementation of a system for waste traceability. A system that will enable the Calabria Regional Agency for Environmental Protection (ARPACAL), by entering data from the forms of individual municipalities, to monitor the entire flow of waste

streams, from collection to treatment by individual plant until the final destination, in a timely and transparent manner.

The training activities, carried out via distance learning, involved all the municipalities and concerned the associated management of services, the pay-as-you-throw scheme, and the identification of plants for the treatment of separately collected waste. The municipal representatives involved appreciated the format offered.

Following the regional elections, and considering the new council guidelines, the Chair of the Regional Government requested the renewal of the Memorandum of Understanding, which provides for the support of CONAI in developing separate collection in lagging municipalities, with a percentage of separate collection of under 50% and with a minimum population of 10,000 inhabitants. The new planning for 2022–2023 is underway, and aims to renew the agreement between CONAI and Regional Governments, also in light of the new regional policy guidelines.

The **Municipality of Reggio Calabria** (185,577 inhabitants) requested an extraordinary and urgent intervention from CONAI, with the aim of redefining a new Plan, with new separate collection systems and models and rewards for virtuous citizens, in order to achieve the minimum separate collection targets as indicated by current legislation. After an initial phase of data collection, identification of critical issues per individual neighbourhood and macro-area of collection, some hypotheses for management were put forward with different models based on the critical issues identified during the inspection. Among the various hypotheses for planning and possible in-house governance, the authority opted to award management contracts to third parties, preparing the documents for the publication of the tender with its own offices. When the contractual terms with the new service manager have finished being defined, CONAI will support the municipality in start-up, communication and user-awareness activities.

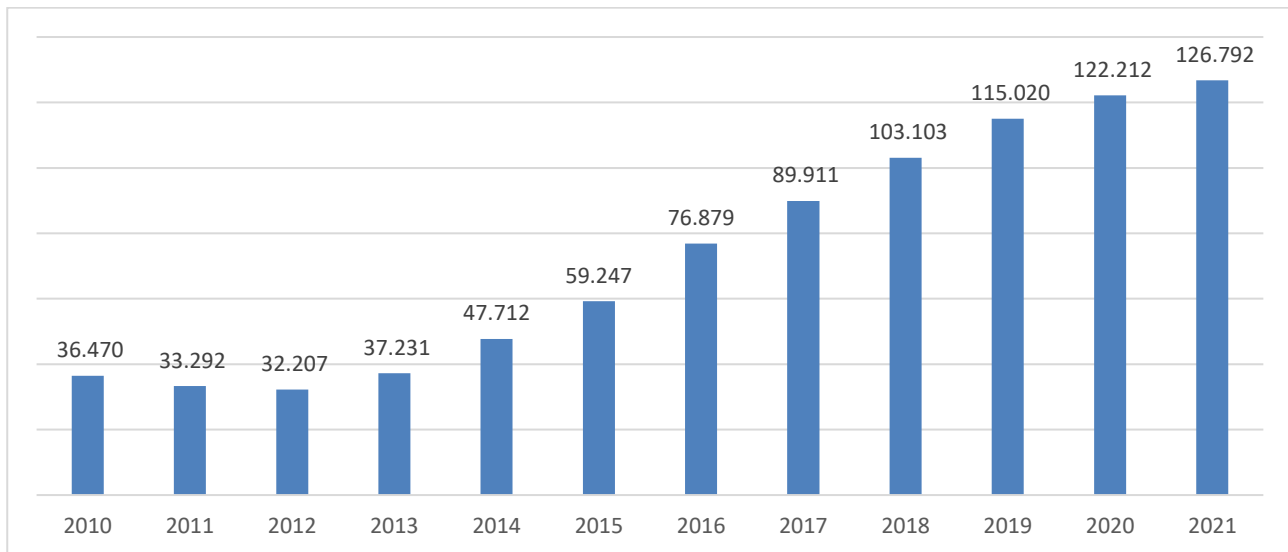
After the activities for the feasibility study for **ATO – Ambito Territoriale Ottimale (“optimum sub-area” [local areas coordinating together to integrate services]) 5 Reggio Calabria** (97 Municipalities – 553,861 inhabitants) ended, in July 2020, the activities for the Area Plan were implemented, which are still ongoing. The sub-area technical management aims to conclude the activity with the approval of the Plan by the first half of 2022, and for the next step, i.e. the preparation of the Executive Plan, it considered it appropriate to request that CONAI continue the collaboration throughout 2022.

Upon completion of the preparation activities of the feasibility studies **Optimum Sub-Area of Vibo Valentia**(50 Municipalities – 160,000 inhabitants), activities started for the drafting of the Area Plan (March 2020) which ended in July 2021 with the delivery of the final papers and its approval by the Assembly of Mayors on 29 July 2021. Also in this case, the sub-area considered it useful to continue the activity with the support of CONAI with the aim of preparing the Executive Plan to be put out to tender to select the sole manager. The activities are ongoing and are scheduled to end in the first half of 2022. The **Ambito Territoriale Ottimale of Cosenza** (150 Municipalities - 708,702 inhabitants) was supported by CONAI for the feasibility study carried out in 2019 and for the preparation of the Area Plan, the first draft of which was submitted in March 2021 with some difficulties, not only due to the large number of Municipalities involved in the sharing of strategic guidelines, but also the recovery of management data of individual Municipalities useful for design activities. The activities ended in 2021 and the ATO approved the Plan with the Sub-area Board in December 2021. The preparation of the executive Plan is ongoing and is scheduled to end in the second half of 2022.

In the Sub-area of Crotona (27 Municipalities – 170,000 inhabitants) preparatory activities for the feasibility study started in February 2021 and ended in July 2021, with some difficulties. In spite of the lack of cooperation of the Municipalities and the Sub-area in the phase of recovery of data and information useful for planning, CONAI, in agreement with the technical facility of the Sub-area and the leading Municipality, prepared the study by retrieving information from available databases (Arpa Calabria, Ispra, Register of Waste). The activities have been suspended during 2022 because at present there is no requirement to continue the collaboration with the Sub-area and the Municipalities representing it. We plan to resume them with the signing of the Protocol with the Calabria Regional Government.

Below is the trend in the quantities of packaging waste managed under the ANCI-CONAI Framework Programme Agreement.

(values expressed in t)



Apulia Region

In implementing the National Recovery and Resilience Plan (PNRR), with the publication of the Ministerial Decrees of October 2021, the **Apulia Regional Government** (257 Municipalities – 4,000,000 inhabitants) requested extraordinary technical support for initiatives aimed at the qualitative and quantitative development of the separate collection and to prepare projects in line with the PNRR – Measure 1.1 (a) of Ministerial Decree 396/2021 “improvement and mechanisation of the separate collection”. The Memorandum of understanding between the Apulia Regional Government, Ager (Agenzia territoriale della Regione Puglia [Local Agency for the Apulia Region] – regional waste management services), ANCI Apulia and CONAI was signed on 30 November 2021 and defines the commitments of the signatories. In particular, CONAI provided technical support to Municipalities through the AROs - Ambiti Ottimali di Raccolta (Optimal Collection Sub-areas) to prepare projects to submit for funding applications. On a regional scale, 122 municipalities out of 257 were involved, for a total of 1,458 SPTs (Soluzioni Progettuali Tipo [Project Solutions Type]).

Also in the Apulia region, even though there are no particularly critical issues, CONAI implemented local initiatives and partnerships in support of the Municipalities. In particular, with the **Municipality of Bari** (320,000 inhabitants) an initial Memorandum of Understanding was signed in March 2015 when the percentage of separate waste collection was already at 35% throughout the municipality. After preparing the executive plan, CONAI supported the municipal authority and the company Amiu Apulia, in both start-up activities and

communication and awareness-raising activities in a pilot area of the city involving 51,000 inhabitants out of 320,000 – specifically, in the districts of Santo Spirito, Palese, Catino, San Pio, San Girolamo, Fesca and San Cataldo. Once the first step was completed, part of the 2nd step was started at the end of December 2019, which involved the district of San Paolo Stanic – Villaggio del Lavoratore, for a total of approximately 8,500 inhabitants. Follow-up activities to the first step were also started in December 2019, to assess the qualitative characteristics of the door-to-door service and of municipal hygiene services in general, which ended in February 2020 with excellent results. In the districts where the new service was implemented, performance exceeded 75 per cent separate waste collection, with an increase of about 4% on the overall percentage for the entire urban area. Due to the COVID emergency and the reorganization of Amiu Puglia to consolidate/enhance existing services, the activities planned for 2020 around the extension of the “door-to-door” collection system to a further 80,000 inhabitants were suspended and only resumed in May 2021 with the updating of the Start-up Plan. Unless further complex issues arise, activities will be implemented for the extension of the door-to-door service in the remaining districts during 2022.

Bari 8 Optimum Collection Sub-area(4 Municipalities – 120,000 inhabitants) – The collaboration work with the Municipality of Monopoli, as the leading Municipality for ARO – Ambito ottimale di Raccolta Bari 8 (Bari 8 Optimum Collection Sub-area), which the Municipalities of Conversano, Mola di Bari and Polignano a Mare belong to, was one of the cases in which the synergy between all the parties involved was efficient and effective both in terms of the time spent in sharing objectives and in the collaboration between all parties involved with the single aim of arriving at a shared model for identifying the single manager for the entire Sub-area. The activity ended in May 2021 and the Sub-area secured the new separate collection service for the entire Sub-area. Unless any particular situations arise due to the pandemic, in 2022, CONAI’s support for the training of managers, preparatory activities for technical and economic feasibility studies for the transition to the pay-as-you-throw scheme in the four municipalities, and technical support to service managers for the start-up stage of the new separate collection service. The activities are underway and will be launched by 2022.

With the aim of reorganising the entire separate collection and municipal hygiene service, the **Municipality of Taranto** (196,702 inhabitants) requested technical support from CONAI for the start-up, communication and awareness-raising activities for citizens and non-household users. The classic systems, designed by the service manager Amiu Taranto Spa, to be implemented were planned to better meet the needs of the area and its unique characteristics:

from door-to-door, which will involve 5 constituencies that represent approximately 81% of the total waste produced, to the placement of street collection systems engineered using “Ecopoints” or Engineered Collection Points (ECP), which relate to the remaining 19% of municipal waste generation.

Due to the COVID-19 emergency, the activities were postponed until 2022 and the new schedule is currently being put together.

Foggia Municipal Authority (147,467 inhabitants), on the instructions of the Special Commissioner, requested technical support for the preparation of the new separate collection service plan under the Memorandum of Understanding signed on 30 November 2021 by CONAI with ANCI Apulia, the Regional Government and Ager.

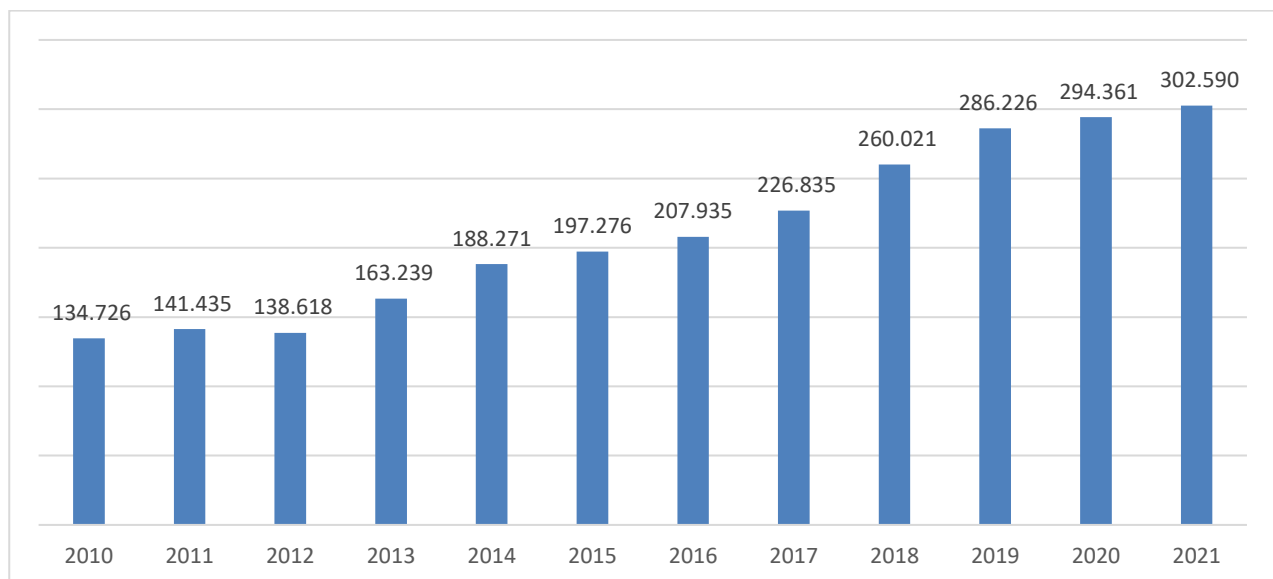
This plan will constitute the basis for the new contract for services with AMIU Apulia.

Also, still within the Protocol of 30 November 2021, the authority requested that CONAI develop the model project solutions to submit for funding applications as provided for by the PNRR (Measure 1.1, line (a) of Ministerial Decree 396/2021)

The preparation of the executive Plan for the new services for the entire local area is ongoing and is scheduled to end in the second half of 2022.

Below is the trend in the quantities of packaging waste managed under the ANCI-CONAI Framework Programme Agreement.

(values expressed in t)



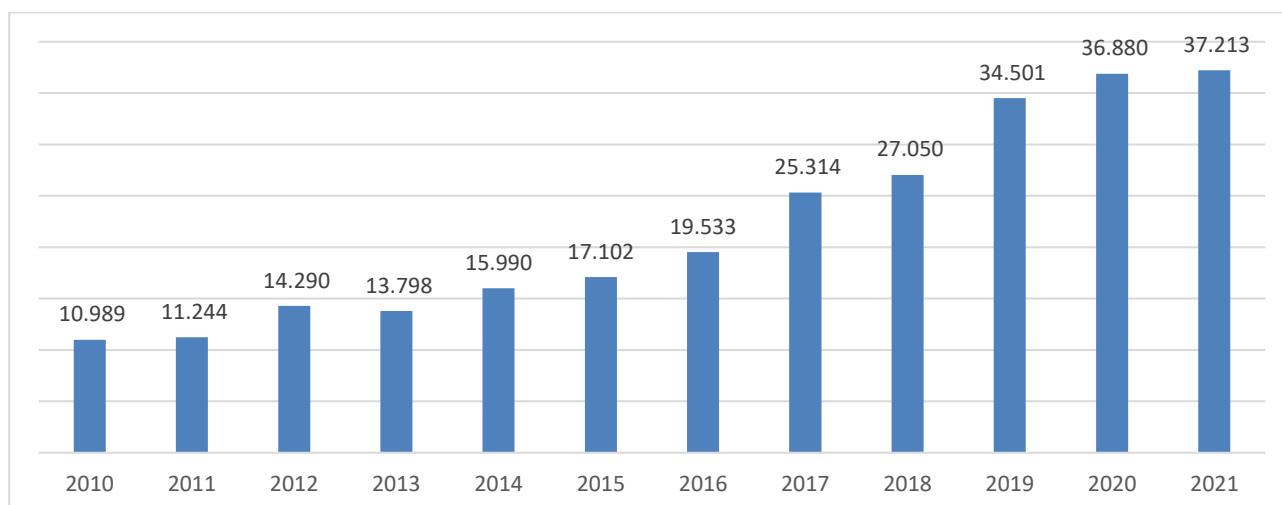
Basilicata region

After various local activities to support municipal authorities, following an institutional meeting, CONAI and the Basilicata Regional Government (131 Municipalities – 563,000 inhabitants) intended to share a Memorandum of Understanding, signed on 9 February 2022, with the aim of carrying out a set of activities targeted at the development and improvement of the separate collection of waste and packaging waste: from the preparation of the Area Plan for the EGRIB (Ente di Governo Regione Basilicata [Basilicata Regional Government Body for waste activities]), to training activities and support for the development of separate collection more generally. Considering the uniqueness of the region, with its small municipalities, it was also agreed that it was necessary to gear management towards processes of integration, going beyond individual management. Therefore, intervention is anticipated in municipalities with a minimum population of 10,000 inhabitants in single or integrated form and with a separate collection percentage of 50% or less, in addition to in Matera.

The support for the updating of the Regional Plan, the drafting of the EGRIB Plan and the market analyses on non-separable waste has been launched. The activities will end in the second half of 2022.

Below is the trend in the quantities of packaging waste managed under the ANCI-CONAI Framework Programme Agreement.

(values expressed in t)



Sicily region

After the renewal of the Amendment Act in 2021, to the 2011 Agreement between CONAI, the Sicilian Regional Government and MiTe in September, the preparatory coordination Working Group was set up for the implementation of the activities under the Agreement. In addition, the working group was set up involving the three metropolitan cities of Palermo, Catania and Messina and their respective SRRs (Società per la Regolamentazione del servizio di gestione Rifiuti [Waste Management Regulation Body]).

The support activities for the **Municipality of Palermo (637,000 inhabitants)** started with Palermo Differenzia 1 (130,000 inhabitants) in 2009 which ended in 2011, to then resume with the Progetto Palermo Differenzia 2 project (6 steps – 120,000 inhabitants) which had numerous hindrances and restarts. In 2019, support activities aimed at start-up and awareness-raising among users, were focused on step V (Oreto-Stazione and Settecannoli) of the Palermo Differenzia 2 project in order to implement the separate collection service in the areas of the city that were not yet involved. In the area of the Palermo Differenzia 1 project – Libertà and Politeama districts (130,000 inhabitants) – the data recorded by the service manager show 52.6% separate collection, albeit characterised by a high incidence of migration of waste to surrounding areas where street bins are still present. In the area Palermo Differenzia 2 (120,000 inhabitants – the districts of Strasburgo, Resuttana, Politeama, Massimo, Borgo Vecchio and Cala – implementation of 3/6 steps) the percentage in 2019 was 63%.

The start-up support activities finished in April 2021 and with the set-up of the working group provided for in the Agreement with the Region and MiTe, future initiatives will be shared and set up in synergy with the aforementioned parties with resources from the Amendment Act.

Munnizza Free – continued its collaboration with Legambiente Sicilia after the success of the first editions. The decision to support municipalities through Legambiente's initiatives, making all the experience gained with virtuous municipalities in the central and southern region, as well as the knowledge of all the technical aspects of management of the conventions under the ANCI-CONAI Framework Agreement available, was one of the reasons that drove the events promoted at the Munnizza Free edition aimed especially at sharing best practices. In particular, three macro-areas of intervention were identified that saw the organization of 9 provincial Ecoforums, on the correct management of packaging waste. The organization of 3 Ecofocuses on the three cities (Palermo, Catania and Messina), involving the collection service management companies and the organization of 3 workshops in the region, with the aim of training/informing the Municipalities on some more general issues, also involving the packaging material consortia.

The activities will continue throughout 2022 and the first half of 2023.

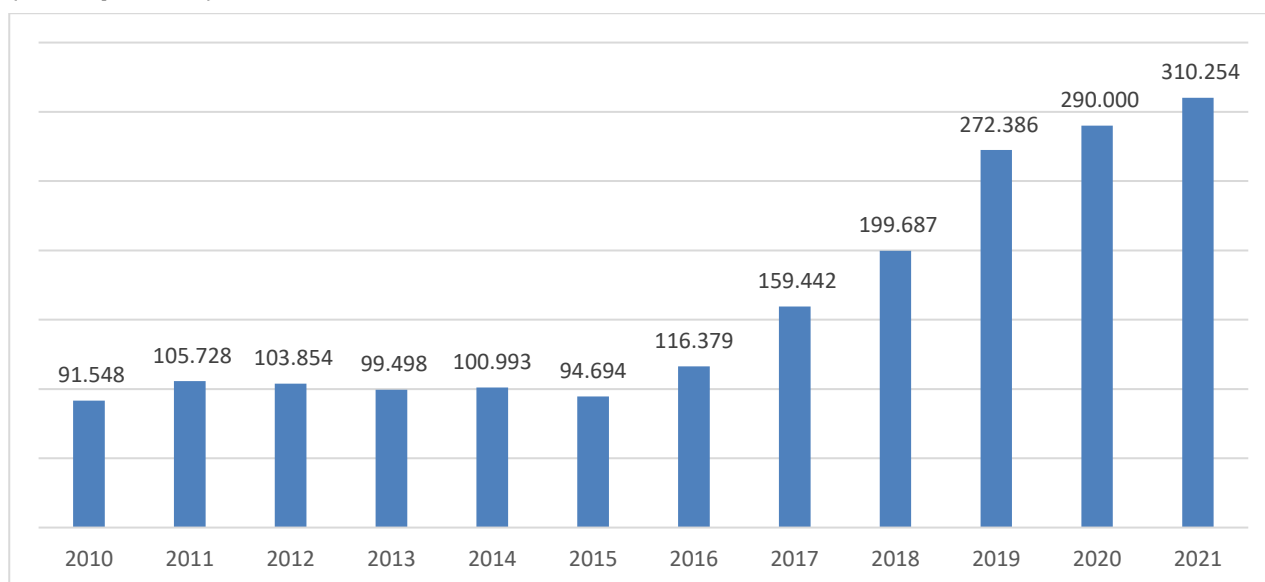
From November 2021, CONAI supported the municipalities of the **Palermo SRR** (20 municipalities – 275,405 inhabitants involved, excluding Palermo), in identifying municipalities that want to develop projects for the pay-as-you-throw scheme and/or projects to overcome critical management issues that prevent the 65% separate collection rate from being achieved. In addition, the SRR made a request for assistance for 2022 to review the Area Plan for all 21 Municipalities of ATO Palermo 16 of the Sicily region. The goal that the governing body aims to achieve, thanks to the support of CONAI, is to maximise the efficiency and cost-effectiveness of management, as well as the identification of a pay-as-you-throw rate in line with the directives imposed by the European Community on the circular economy.

The activities will end in the second half of 2022.

The SRR also intends to promote an environmental education project aimed at students (from 6–8 years) during 2022, in partnership with Ancitel EA and called Waste Travel 360.

Below is the trend in the quantities of packaging waste managed under the ANCI-CONAI Framework Programme Agreement.

(values expressed in t)



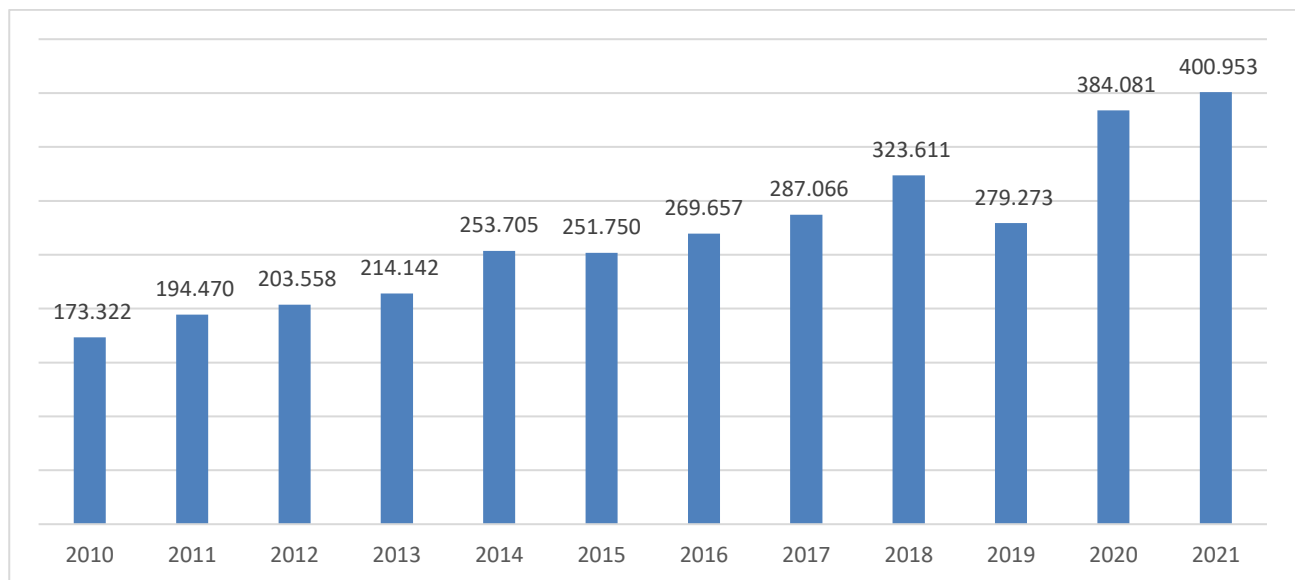
Lazio region

On the request of the Municipal Authority of Rome (2,770,226 inhabitants), CONAI expressed its willingness to support the municipality and the company Ama Spa in implementing a new separate collection model in two Municipalities of the city area. The technical support

requested relates to the start-up planning stage and communication to non-household citizens and users (200,000 inhabitants involved). According to the latest Ispra report, the percentage of separated waste collection was 44% in 2020, down approximately two points compared with 2019. Hence the need for a very effective relaunch of a new management model that would give a major qualitative and quantitative boost by concentrating only on two municipalities of Rome at this initial stage.

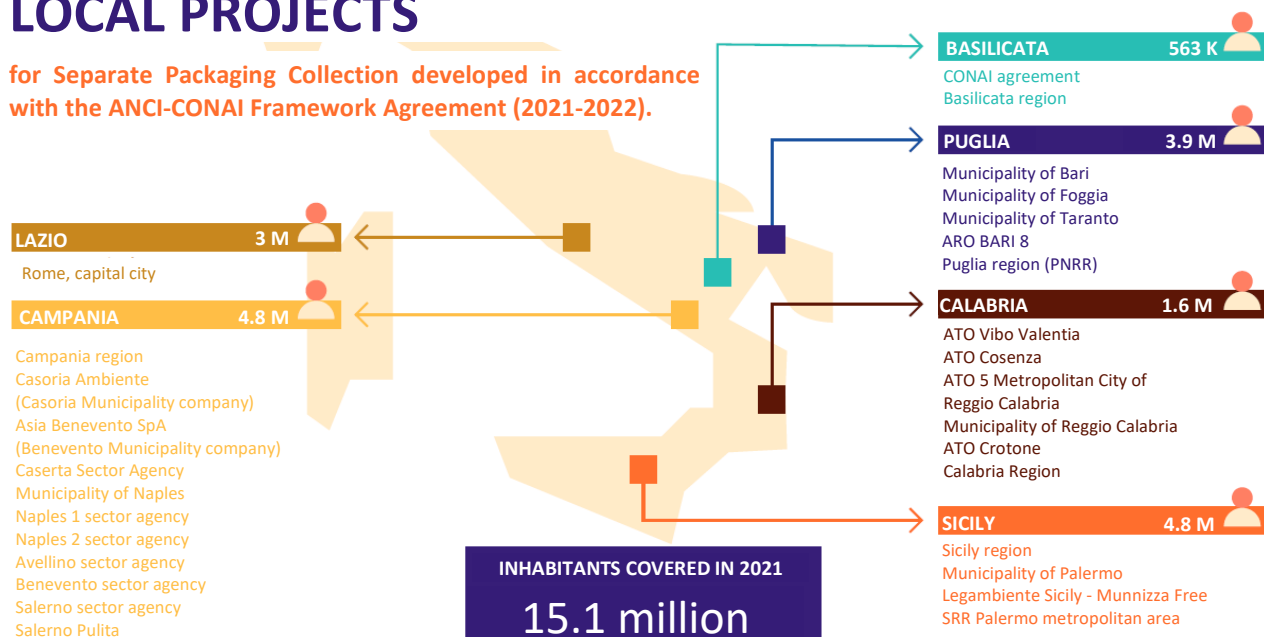
Below is the trend in the quantities of packaging waste managed under the ANCI-CONAI Framework Programme Agreement.

(values expressed in t)



LOCAL PROJECTS

for Separate Packaging Collection developed in accordance with the ANCI-CONAI Framework Agreement (2021-2022).



CONAI Extraordinary Projects

At the request of the MATTM (Ministry for the Environment, Land and Sea), now MiTe – the Ministry of Ecological Transition, of 13 July 2020 for CONAI to carry out an extraordinary intervention for two municipalities in the Terra dei Fuochi area (Land of Fires), CONAI acted immediately to implement a project that could meet the actual needs of Municipalities by intervening upstream, i.e. on the reorganization of separate collection services, instead of on the dumping of waste.

Only the **Municipality of Caivano** – (Naples) – (37,454 inhabitants) was focused on during the planning activities, due to the lack of willingness on the part of the Municipality of Giugliano in Campania (Naples).

After several discussions, this led to the sharing of a project with the Municipality of Caivano to improve the efficiency of the municipal collection centre, which is rarely used by users today. This involves intervention on the purchasing of certain equipment to enable the municipal authority, the service manager and users, to correctly deliver packaging waste, also by receiving rewards from the municipal authority in the forms that will be defined in the executive plan between the Municipality and the service manager.

The support activities will end in the second half of 2022.

After CONAI prepared the guidelines for correct packaging waste management on the UNESCO sites, in line with what was done in the past with the Pompeii archaeological sites in 2015, the authorities of **Reggia di Caserta** (728,000 visitors in 2019) asked CONAI for support in reorganising the separate collection service within the site with the possibility of purchasing part of the equipment and promoting communication and awareness-raising activities for visitors and residents at the site.

The support activities will end in the second half of 2022.

Support for EGATO and the Municipalities to submit projects for the MiTe call for tender under the PNRR

In addition, CONAI, under the PNRR – the National Recovery and Resilience Plan – set up an extraordinary Technical Working Group, with the aim of supporting operational EGATO bodies as a priority, and – where these do not exist – Italian Municipalities both individually and jointly in central-southern Italy in their municipal separate collection network improvement and



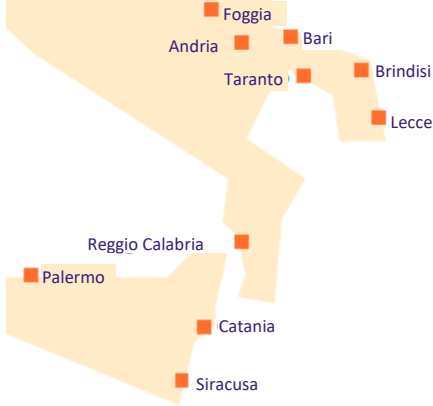
mechanisation project proposals, Measure 1.1 line a) of Ministerial decree 396/2021.

A total of 189 competent authorities requested support, of which 122 were in the Apulia Region alone, while the remaining authorities were spread throughout Campania, Calabria and Sicily, covering a population of over 4.7 million inhabitants. Standard project solutions, presented by the CONAI working group and ANCI involved individual municipalities, many area authorities, metropolitan cities and provincial capitals for a total of 1,775 model interventions, submitted in 189 municipalities for a calculated economic value of approximately 115 million euros. Examples of interventions related to projects from (a) to (d) of Measure 1.1 line (a): from optimising collection by introducing computerised facilities/equipment with smart mini eco-islands, equipment for diversification of separate collection chains, implementation of hardware and software tools for IOT applications and management and automation systems in the distribution of consumable supplies to the user for separate collection and finally equipment in municipal collection centres (CCRs) in accordance with Ministerial Decree 8/4/08.

This result was possible thanks to the collaboration between CONAI and the MiTE, national ANCI and the regional areas of ANCI Puglia, Sicily and Calabria.

TOTAL PROJECTS PRESENTED

TOWNS INVOLVED



4.7 M

inhabitants covered by CONAI action



189

total municipalities involved



1.775

project solution type



115

value of projects developed



1.290

SPT – A1
Mini intelligent recycling centres (on fenced-off publicly-owned land)



82

SPT – A2
Mini intelligent apartment block/neighbourhood recycling centres (on unfenced-off publicly-owned land)



220

SPT – B
Suppliers of Digital Recycling stations or Ecoboxes



100

SPT – C
Hardware and software tool implementation and pay-as-you-throw scheme



76

SPT – D1
Small municipal collection centres, 2400 m²



7

SPT – D2
Large municipal collection centres, 3600 m²

PROJECT IMPACT

PNRR



EMPLOYMENT AND SUPPLY FORECASTS 2023-2026

Type of action	Number of people hired
Work	183
Supply	198
Total	381



MANAGEMENT EMPLOYMENT FORECASTS 2023-2026

Type of action	Number of people hired
Municipal collection centres	257
Intelligent recycling centres	48
Total	305



SEPARATE WASTE COLLECTION STREAMS 2023-2026

Waste generated 2019 (t/year)	Separate waste collection increases over 2019 (over 2026) (t/year)	Average SC increase over 2019
2,355,256	735,579	32%



CO₂ EMISSIONS SAVINGS

Type of action	Km/year less overall	Kg of equivalent CO ₂ /year less	Kg of equivalent CO ₂ less, 2024-2026	Equivalent CO ₂ costs less, €/year	Equivalent CO ₂ costs less, 2024-2026 €/year
Municipal collection centres	29,930,000.00	5,986,000.00	17,958,000.00	478,880.00	1,436,640.00
Intelligent recycling centres	34,835,600.00	6,967,120.00	20,901,360.00	557,369.60	1,672,108.80
Total	64,765,600.00	12,953,120.00	38,859,360.00	1,036,249.60	3,108,748.80

THE INDUSTRIAL AND COMMERCIAL PACKAGING WASTE PLATFORM

One additional tool for achieving recycling and recovery targets is the network of platforms made available to companies as a guarantee to recycle industrial and commercial packaging waste.

Given the type of waste, the lower the management costs, the greater the chances of it being recycled without any form of support. In fact, it must be remembered that these types of packaging waste are generally more easily absorbed by the market as the lower cost of collection and cleaning operations makes their management and sale profitable, downstream of the operations required by law as second raw materials (these types of waste are available from their respective producers with quantitative and qualitative characteristics that are considerably superior to their municipal waste counterparts).

For this reason, the packaging material consortia–CONAI system is offered with a strictly guarantee function; therefore, for the individual cases in which the market would not manage packaging materials for recycling, it offers a secondary-level service, also on commercial and industrial packaging waste – a service that acts as a safety net in areas (and at times) in which market conditions may be unfavourable.

There are four packaging material consortia directly involved in the management of industrial and commercial packaging: Consorzio Ricrea, Comieco, Rilegno and Corepla whose means of intervention mainly concern:

- financial support for reusable solutions and/or restoration and reprocessing activities;
- agreements with delivery platforms for commercial and industrial activities and subsequent recycling;
- agreements with recycling management plants for specific special waste streams;
- economic support and SC management under agreements for the significant (and growing) presence in municipal SC.

COMIECO, COREPLA and RILEGNO, under specific agreements, have created a network of 579 platforms throughout the country (see below) capable of receiving packaging waste from industrial, commercial, artisan and service companies free of charge.

In this regard, Article 221 of the Consolidated Environmental Act (TUA) requires packaging manufacturers to identify collection points for the delivery of used packaging, in compliance with the companies using the packaging.

At operational level, this means that packaging users deal with the collection and transport to the platform identified, while producers bear the burden of the subsequent re-use of the material.

Therefore, companies can deliver their packaging waste to the platform network by bearing the costs of transport, and the packaging material consortia are liable for the costs of sorting and re-use of the delivered waste.

Also, a network of platforms dedicated to the restoration and regeneration of such rigid industrial packaging is supported as part of a specific agreement signed in 2012 between CONAI, COREPLA, RICREA, RILEGNO and companies in the sector of the restoration and recycling of multi-material drums, cages and tanks, represented by ARI, ANRI and CONFIMA. 31 plants joined the network in 2021.

In particular, COREPLA helps manage packaging from commerce and industry through three types of agreements with:

- PIFUs – drum and tank platforms for restoration, reuse and recycling of primary rigid industrial packaging. Providing a structure of fees with the aim of encouraging the reuse and thus regeneration of packaging. As of 2021, 33 framework agreements were active.
- PEPS - expanded polystyrene packaging recycling platform. During the course of 2021, the number of platforms contracted remained at 30.
- PIA – platforms for the collection of plastic packaging waste from private premises free of charge. This activity is mainly carried out in partnership with the plants associated with the CARPI Consortium; there were 43 agreements with platforms offering to collect plastic packaging waste from business establishments and industries. Contracted companies such as PIA offer the service to 46 plants. The quantities recycled by PIAs are allocated to so-called independent recycling, which is discussed below. It should be noted that over half of the platforms that are members of the CARPI consortium (15 out of 27) carry out recycling activities directly at their sites, which contributes to the much-desired shortening of the supply chain.

Summary of actions on industrial and commercial packaging by packaging material consortia

CONSORTIUM	RE-USE	REGENERATION	RECYCLING	ASSIMILATION
RICREA		<ul style="list-style-type: none"> Drums and tanks: 35 ktonnes 	<ul style="list-style-type: none"> Non-regenerable hazardous drums: 12 ktonnes Non-hazardous non-reusable: 130 ktonnes Strapping: 23 ktonnes 	
COMIECO			<ul style="list-style-type: none"> Collection at business premises and other small and medium-sized businesses (UND) Network of 126 platforms 	Domestic-use cardboard boxes in combined SC and non-domestic-use selective SC
RILEGNO	Weight abatement on EPR Fee for reusable packaging: 908 ktonnes benefited from fee reduction	<ul style="list-style-type: none"> Recovered cistern bases: 10 ktonnes per 31 plants. Pallet retreatment project: 134 ktonnes of regenerated pallets from 63 consortia 	<ul style="list-style-type: none"> Network of 394 platforms: 916 ktonnes 	
COREPLA		<ul style="list-style-type: none"> Drums and tanks (PIFU): 27 ktonnes per 33 plants 	<ul style="list-style-type: none"> PEPS - expanded polystyrene packaging recycling platform: 10 ktonnes per 30 plants Network of 43 platforms jointly with CARPI consortium member plants: 155 ktonnes 	Film: 136 ktonnes

As of 31 December 2021, the overall number of industrial and commercial waste management platforms belonging to the CONAI-packaging material consortia system was 579¹³ distributed throughout the country: 52% in the north, 18% in the centre and 30% in the south.

¹³ The overall number of plants also takes into account platforms dedicated to receiving multi-material drums and tanks for expanded polystyrene packaging waste.

Region	No. of plants	Paper	Wood	Plastic	Steel
Abruzzo	17	2	12	3	0
Basilicata	5	1	3	2	0
Calabria	27	8	22	0	0
Campania	40	20	19	6	1
Molise	3	0	2	1	0
Puglia	26	7	17	6	0
Sardinia	9	3	0	6	0
Sicily	50	8	40	4	0
South	177	49	115	28	1
Lazio	48	7	42	2	1
Marche	18	2	17	0	0
Umbria	11	2	8	4	0
Tuscany	26	3	19	9	2
Centre	103	14	86	15	3
Emilia Romagna	55	13	41	11	1
Friuli Venezia Giulia	10	2	7	2	0
Liguria	20	3	16	2	1
Lombardy	97	20	46	32	16
Piedmont	42	8	26	11	6
Trentino Alto Adige	17	5	12	1	0
Valle D'Aosta	2	1	1	0	0
Veneto	56	11	37	13	3
North	299	63	186	72	27
Total	579	126	387	115	31

Source: Packaging Material Consortia

2.6 Research and development

CONAI believes that it is essential to collaborate with scientific institutes, universities and national centres to evaluate new horizons in research. In view of the adoption of new recycling targets for the Circular Economy, CONAI intends to continue playing a proactive role in encouraging and incentivising the packaging material consortia to carry out research and technological innovation projects to promote the recycling of post-market packaging streams that are not currently recyclable, with particular reference to the most complex waste fractions. It also intends to intervene upstream on the research and promotion of innovative solutions for

packaging eco-design. CONAI intends to broaden and strengthen its network in this regard, with top universities, research centres and organizations active in these fields, promoting new studies and research and also evaluating possible international collaborations for the scouting of innovative technologies and solutions.

Some of the study and research initiatives planned by the Consortia.

CiAI intends to continue to acquire datasets from major research institutes in large-scale retail and other distribution channels, in order to integrate information on the placing on the market of various types of aluminium packaging in different areas of the country.

Comieco will continue research aimed at recycling and related to the extension of the fee modulation to all composite packaging, with particular reference to the effectiveness of existing technologies for sorting and preparation for recycling. In this context, partnerships will be developed with universities, packaging material associations and other organizations to address certain issues related to recyclability and innovation (eco-design, food packaging, e-commerce).

Corepla is planning research and development activities especially for the reuse of plasmix with 3 different projects related to feedstock recycling. Collaborations with universities will also be further increased with the intention of developing research initiatives in the field of plastic packaging recycling.

In cooperation with a number of European companies, Rilegno is involved in a European project launched in 2020, the main objective of which is to raise awareness about the adoption of efficient wood treatment and recycling processes. Furthermore, the activities and feasibility studies undertaken with regard to RFID technology led to the planning of a trial of the application of RFID technologies to the tracking of pallets.

Coreve will continue its initiatives on the prevention of the generation of glass packaging with a particular focus on making the average weight of glass containers lighter.

Ricrea is involved in the development of partnerships with trade associations and in particular with those in MPE (Metal Packaging Europe), with specific reference to the marking of steel packaging to simplify recovery and recycling activities.

Biorepack intends to develop projects aimed at the monitoring of organic recycling technologies in order to improve the efficiency of the supply chain and minimise waste from treatment plants.

2.7 Other tools to achieve targets

2.7.1 Study and research

In 2021 CONAI intensified considerably study and research activities – conducted in cooperation with universities and experts in the sector – that were useful in gathering qualitative, quantitative and strategically functional information on the sector. In this context, many in-depth studies have been carried out in Europe, with many comparative studies have been carried out in Europe on the efficiency of different PRO organizations and Deposit Return Systems (DRS) and models for reuse and recycling. Alongside international research activities, consumer and local prevention analysis activities continued, and several in-depth analyses were launched in various areas, both to better understand the evolution of the macroeconomic and social context, and more technically, related to the recycling chain.

STUDY AND RESEARCH

Partnerships with universities and experts set up for the purposes of collecting qualitative and quantitative information useful in strategic assessments and for a better understanding of context have been stepped up.

EUROPEAN

- Bocconi University** - Comparative analysis of the **economic efficiency** and **effectiveness** of EPR organizations in the EU.
- Centro Materia Rinnovabile** — Comparative analysis of the **diverse organizational solutions** adopted by **18 European countries** in their attempts to conform to the obligations set out in the Packaging Directive.
- EGEN-PNO GROUP** - and financial-management analysis on currently **applicable deposit refund systems applying to packaging recycling and reuse.**

ITALIAN

- Sant'Anna School of Advanced Studies Management Institute** - Progetto SCELTA **consumer purchase trend** observatory.
- Observatory on local level prevention initiatives** - **Mapping local authority** waste reduction initiatives.
- Fondazione per lo Sviluppo Sostenibile - Green City**: projects on **city waste management state of the art and the new circular economy directives** in the nation's 3 macro areas (north, centre, south).
- Waste Watcher International Observatory** on the food waste theme.
- Prometeia** - **forecast models for goods put on the market** and second raw material prices.

Europe

A number of European studies related to the management of packaging and packaging waste in Europe launched in 2021 continued in 2022, some of which were completed.

CONAI commissioned **GREEN (Centre for research in Geography, Resources, Environment, Energy and Networks)** at Bocconi University with the study “**Screening the EU packaging waste management: Producer Responsibility Organization efficiency and effectiveness**”.

An analysis of the economic efficiency and effectiveness in recycling of the organizations which,

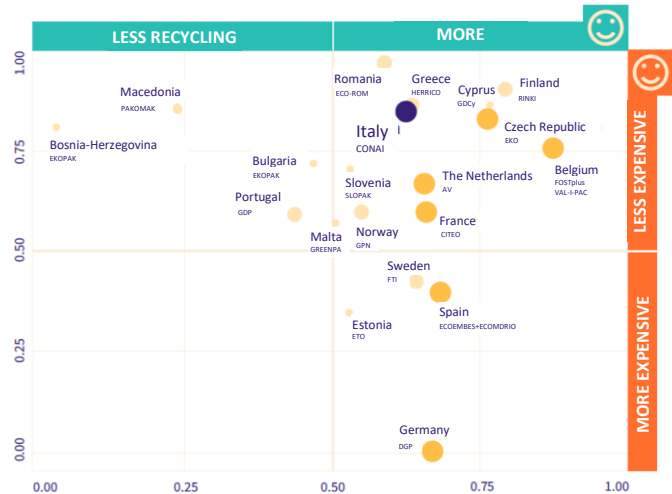
on behalf of the product producers (PROs), implement extended producer responsibility obligations in the respective EU member states, which shows the positioning of the CONAI system among the effective and efficient PROs.

CONAI IS THE MOST EFFICIENT OF THE PROs OF MORE DENSELY POPULATED NATIONS

CONAI is the **least expensive** PRO amongst nations with populations of **over 10 million**

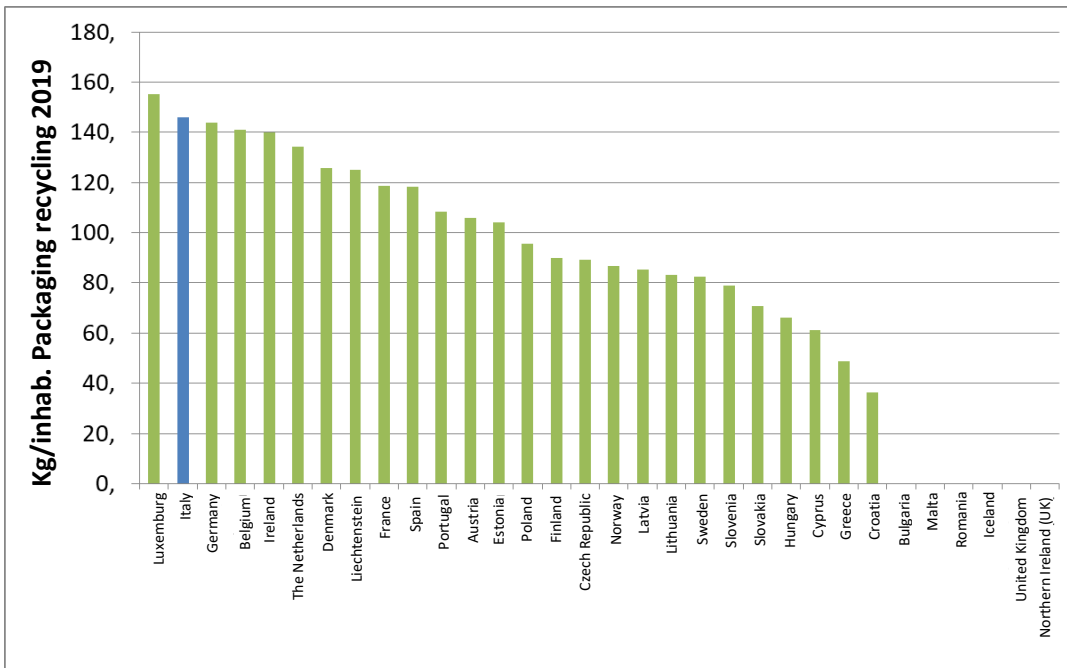
KEY:
Depending on population figures we can distinguish

- small PRO
- medium-sized PRO
- large PRO

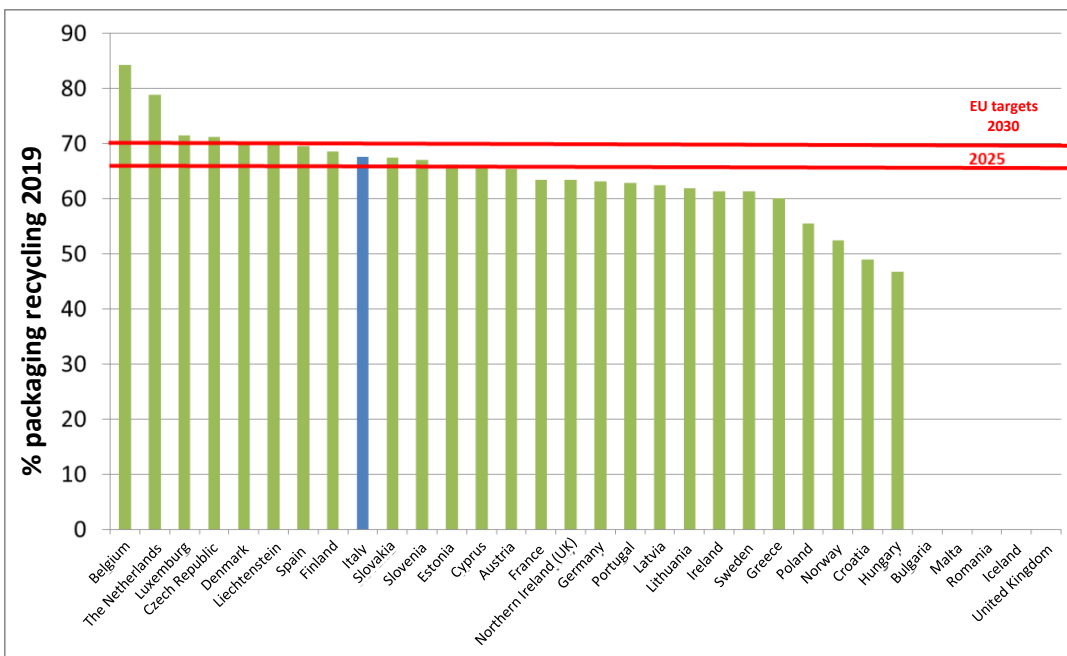


CONAI commissioned the **Centro Materia Rinnovabile** (Centre for Renewable Matter) with the study **“Packaging management models in Europe”**, a snapshot of the various solutions adopted by 18 European countries to comply with the obligations under the Packaging Directive as most recently amended in 2018. Understand the winning models in the context in which they operate in order to have the necessary elements available for the review of the national model. This study analysed the qualitative and quantitative characteristics of the countries examined and their respective main PROs (producer responsibility organizations) in the management of packaging waste, analysing and comparing the features of management systems, operational and financial responsibility, fees and other factors with the CONAI EPR organization.

EU recycling performance per capita of packaging put on the market in the member state



EU recycling performance as a percentage of packaging put on the market in the member state



CONAI subsequently commissioned two further studies from the Centro Materia Rinnovabile (Centre for Renewable Materials – CMR).

The first study, “Packaging EPR FEE in UE” involved a comparative analysis through a simplified indicator of the different FEEs adopted in 17 European contexts. Taking four packaging solutions common to all PROs as samples, the intention was to identify the countries where the FEEs are the lowest, as well as to assess the upward or downward trends for each material for the last two years.

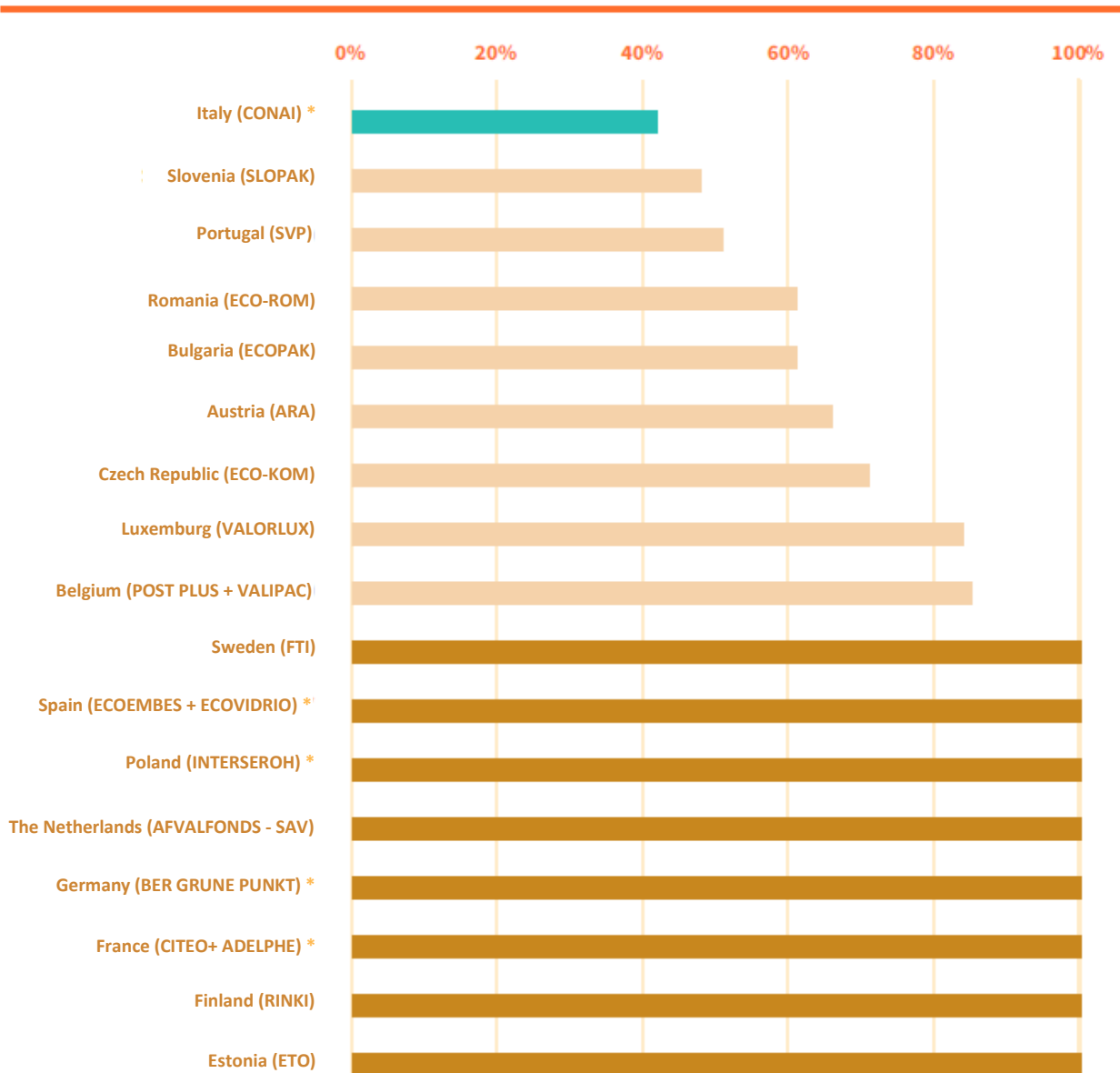
TABLE 3: CHANGES IN AGGREGATE FEE INDICATORS BETWEEN 2022 vs 2021

Countries	Main PROs	Aggregate FEE indicator 2021 (€ cents)	Changes compared to 2022
Slovenia	SLOPAK	2.4	-42.0%
Italy *	CONAI	4.0	-36.2%
United Kingdom *	VALPAK	2.6	-24.7%
Portugal	SPV	5.1	-22.8%
Luxemburg	VALORLUX	4.1	-20.8%
Belgium	FOST PLUS	6.0	-13.1%
Germany *	GRUNE PUNKT	12.1	-73%
Finland	RINKI	73	-2.9%
Romania	ECO-ROM	7.5	-2.8%
The Netherlands	AFVALFONDS (SAV)	6.2	-1.0%
Estonia	ETO	9.4	0.1%
Sweden	FTI	12.2	0.2%
Bulgaria	ECOPACK	6.8	+0.4%
Austria	ARA	103	+1.1%
France *	CITEO	63	+2.2%
Spain *	ECOEMBES	5.7	+2.5%
Czech Republic	EKO-COM	10.0	+15.5%

[*] Countries with a population above 20 million inhabitants.

The second study “Packaging EU EPR Organizations: Degree of operational responsibility What are the differences?” the degree of management, financial and operational activities carried out by the main EPR organizations for packaging (known as “Main PRO”), which in 2018 operated in each of the 17 countries considered, was analysed in order to assess their role and performance within their respective national markets.





















GRAPH 1: MARKET SHARE OF MAIN PROs IN THE EU, AS A PERCENTAGE OF OPERATIONAL RESPONSIBILITY OF EACH MAIN PRO IN THE RELEVANT COUNTRY



[*] Countries with a population above 20 million inhabitants.

























CONAI commissioned EGEN-PNO GROUP with the study “Mapping DRS, Deposit Refund System, for reuse and for recycling in Europe”, a scan of current deposit return systems for the return of empty beverage packaging, and a detailed analysis of 5 country cases: Estonia, Germany, Lithuania, the Netherlands, Sweden. The study, which analysed the DRS systems of the 5 selected countries with both qualitative and quantitative methodology, aims to overcome the shortage in information on the subject by defining the main structural, organizational and financial characteristics of deposit systems for recycling and reuse.

DRS for reuse: main features and indicators of the existing systems in 5 EU countries

		Netherlands	Lithuania	Estonia	Sweden	Germany							
DRS RE-USE		System Operator		BNR fles	DESA	Eesti	Sveriges Bryggerier	Mehrweg pfand					
		Organization Type (Not-for-profit)		x	x	x	x	x					
		Legal Basis Deposit			x	x							
		Mandatory introduction of Reusable packaging			x	x							
		Mandatory Participation DRS			x	x							
		EPR (Extended Producer Responsibility)	Before										
			After		x	x		x	x				
			Same time				x						
		System Operator Responsibilities	Financial										
			Operational		Shared	Shared		Shared	Some cases				
			Financial & Opera				Shared						
		Type of packaging included				  		 					
		Volumes of packaging (Tonnes per year)		455,000	20,161	9,915	49,474	-					
		Average Return Rates (%)		97.5	93	90	99	98.8					
		Deposit Value (cent€)		10		10		5.9 (33cl)-8.9(50cl)		8-25			
				M€/y	€/inhab	M€/y	€/inhab	M€/y	€/inhab	M€/y	€/inhab		
		Total deposit fees		179.13	10.3	6.1	2.18	3	2.26	9.65	0.93	N/A	N/A
		Total deposit fee paid		174.65	10	5.67	2.03	2.7	2.03	9.51	0.92	N/A	N/A
Total unredeemed deposit fee		4.48	0.26	0.43	0.15	0.3	0.23	0.14	0.14	N/A	N/A		
	Transparency		Limited	Limited	Limited	Limited	Limited	Limited					

** plastic only by law (not in practice)

DRS for recycling: main features and indicators of the existing systems in 5 EU countries

		Netherlands	Lithuania	Estonia	Sweden	Germany							
DRS RECYCLE		System Operator		Statiegeld NL	USAD	Eesti Pandipakend	Returpack	Pfand System					
		Organization Type (Not-for-profit)		x	x	x	x	x					
		Legal Basis Deposit		x	x	x	x	x					
		Mandatory introduction One-way packaging											
		Mandatory Participation DRS		x	x	x	x	x					
		EPR (Extended Producer Responsibility)	Before						x				
			After		x (DRS's Owner)			x					
			Same time			x	x						
		System Operator Responsibilities	Financial										
			Operational						Shared				
			Financial & Opera		x	x (Material owner)	x (Material owner)	x (Material owner)					
		Type of packaging included			  	  	 	  					
		Volumes of packaging (Tonnes per year)		41,000	25,997	13,780	48,548	-					
		Average Return Rates (%)		93	90	91	85	96-98					
		Deposit Value (cent. €)		25		10		11-22		25			
				M€/y	€/inhab	M€/y	€/inhab	M€/y	€/inhab	M€/y	€/inhab		
		Total deposit fees		300	17.41	67	23.96	28	21.05	322	31.18	4500	54.11
		Total deposit fee paid		279	16.03	61	21.93	24	18.04	270	26.13	4365	52.48
Total unredeemed deposit fee		21	1.21	6	2.04	4	2.95	52	5.04	135	1.62		
	Transparency		Limited	Clear	Clear	Limited	Limited						

On the basis of the study, a cost-benefit analysis model was carried out for a second study “Evaluation of Costs and Benefits of Deposit Return Systems (DRS) for Packaging Waste in Italy” which CONAI commissioned GREEN at Bocconi University with. An analysis of cases and experiences of DRSs in Italy, both present and past, compared with the existing regulatory framework and with regard to different packaging materials, with a focus on quantitative and economic performance, to evaluate the trade-offs and synergies between DRS and current packaging waste collection and recycling systems.

All of these studies, which were developed in 2021, are and will be disseminated in 2022.

Italy

Within the context of **study and research**¹⁴, the second edition of the observatory on consumer purchasing trends and their role in the development of the circular economy, with the **SCelta Project**, in collaboration with the Sant'Anna School of Advanced Studies Management Institute. The study, which was based on analysis of the context and questionnaires addressed to a representative sample of the population, investigates consumers' perceptions on the varying scales of circularity of products and how this perception influences their purchases.

The research involved three steps – one, an analysis of the literature; another on investigation, which consisted in the administration of a questionnaire by Nielsen to a sample of 1,643 respondents, identified as responsible for purchasing in Italian households; and the last, on experiments, aimed at testing consumer tendencies in purchasing circular packaging, even when influenced by exogenous variables, such as information and/or price changes.

The research was partly reported in the Re-Economy summit by Il Sole 24 Ore held on 14 October 2021.

The full results of the research will be shared in the section titled Study and Research on the CONAI website with the aim of offering a useful tool for companies and all stakeholders in the supply chain to refer to for correct information on environmental sustainability and the circularity of products and packaging.

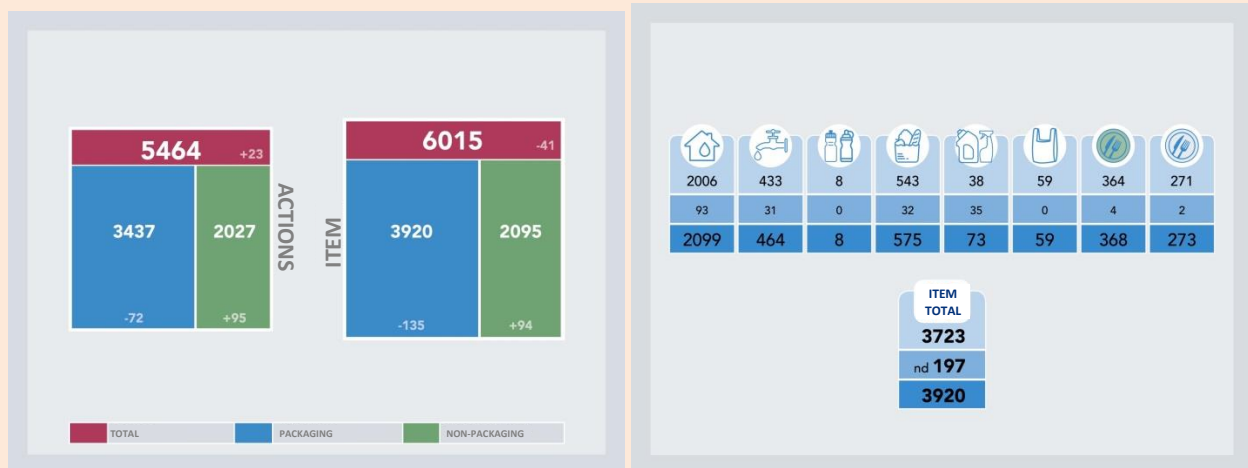
¹⁴ All of CONAI's study and research can be consulted and downloaded in the section on Prevention/Study and Research on the website www.conai.org.

The **Observatory for local prevention initiatives**, a mapping of prevention practices promoted and implemented by local authorities through specific schemes, continued to be updated. The updates on the study will be uploaded in the Study and Research section on the CONAI website soon.

OBSERVATORY FOR LOCAL PREVENTION INITIATIVES

The Observatory for local prevention initiatives provides a snapshot of the prevention actions carried out by the public administration in Italy at a local level, concerning packaging and non-packaging.

In 2021 (for the first time), the monitoring of actions and items regarding packaging recorded a decline, in particular, the actions regarding biodegradable and compostable cutlery and dishes and the case of water, while the actions concerning primary packaging in general, the distribution of water bottles and of unpackaged detergent (from taps).



With regard to the aims of actions on packaging, growth has been noted in those actions aimed at reducing impact, where the reduction in the impact is understood as replacement of packaging material as it is perceived by the implementing party as an intervention for reducing the environmental impact.

Main Packaging Target

reduce quantity

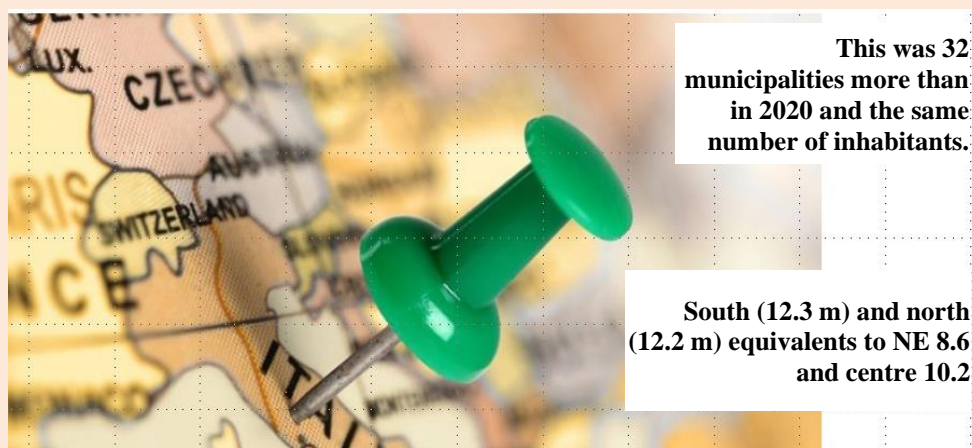
2021 data

Purpose	No. items involved
reduce impacts	329
reduce quantity	3057
Both	51

2020 data

Purpose	No. items involved
reduce impacts	265
reduce quantity	3590
Both	200

In 2021, 3,103 Italian municipalities were involved in prevention actions on packaging and non-packaging, with the equivalent of 43.5 million inhabitants involved.



During 2021, several projects were supported to review the circular economy in Italy from different perspectives and by different stakeholders.

In particular, CONAI sponsored the **Report on the Circular Economy** by the Fondazione per lo Sviluppo Sostenibile (Foundation for Sustainable Development) and developed within the Circular Economy Network to which CONAI belongs, the **Green Italy Report** courtesy of Symbola and the publication *Italia del Riciclo* (Recycling in Italy). Studies confirm Italy as a

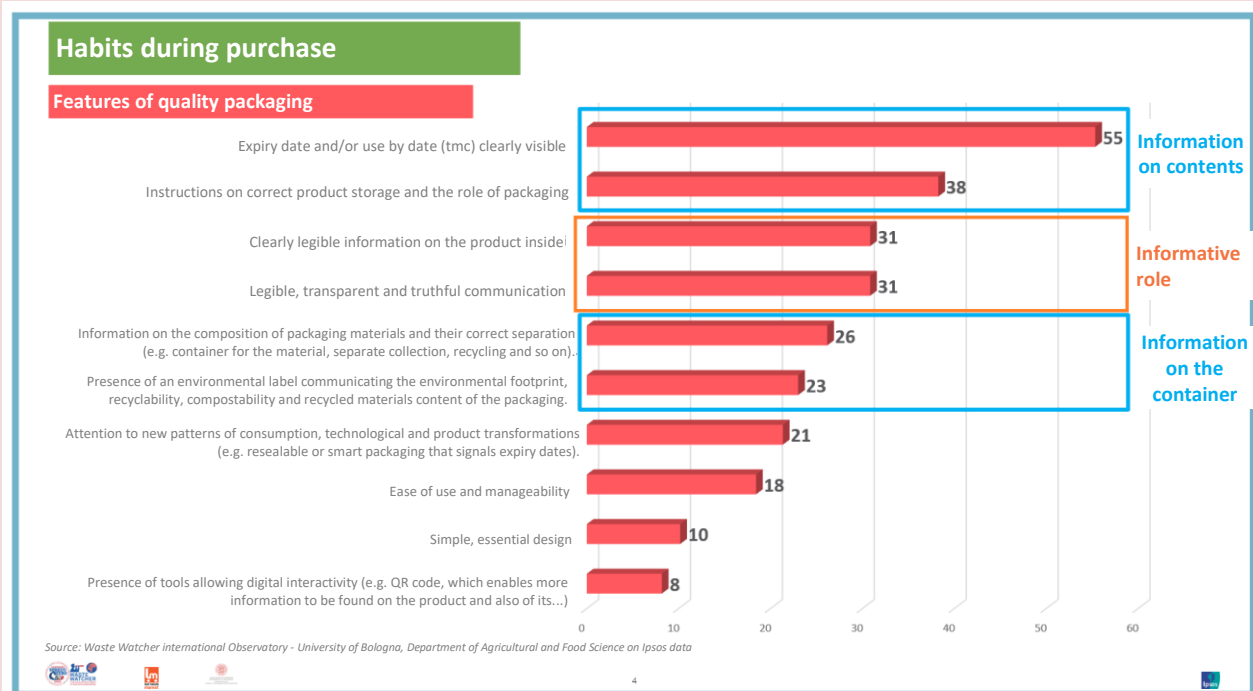
leading country in the circular economy and recycling, as the central support among the positive outcomes achieved.

Also in 2021, **4 research projects on Green Cities were submitted**, with technical and scientific support from the Fondazione per lo Sviluppo Sostenibile, to sum up the state of the art of waste management in cities and the new circular economy directives in the 3 macro areas of Italy (north, centre and south) and with a special focus on Sicily. Such research is an important starting point for understanding the main lines of intervention on which to act to improve waste management at the local level, promoting the urban circular economy.

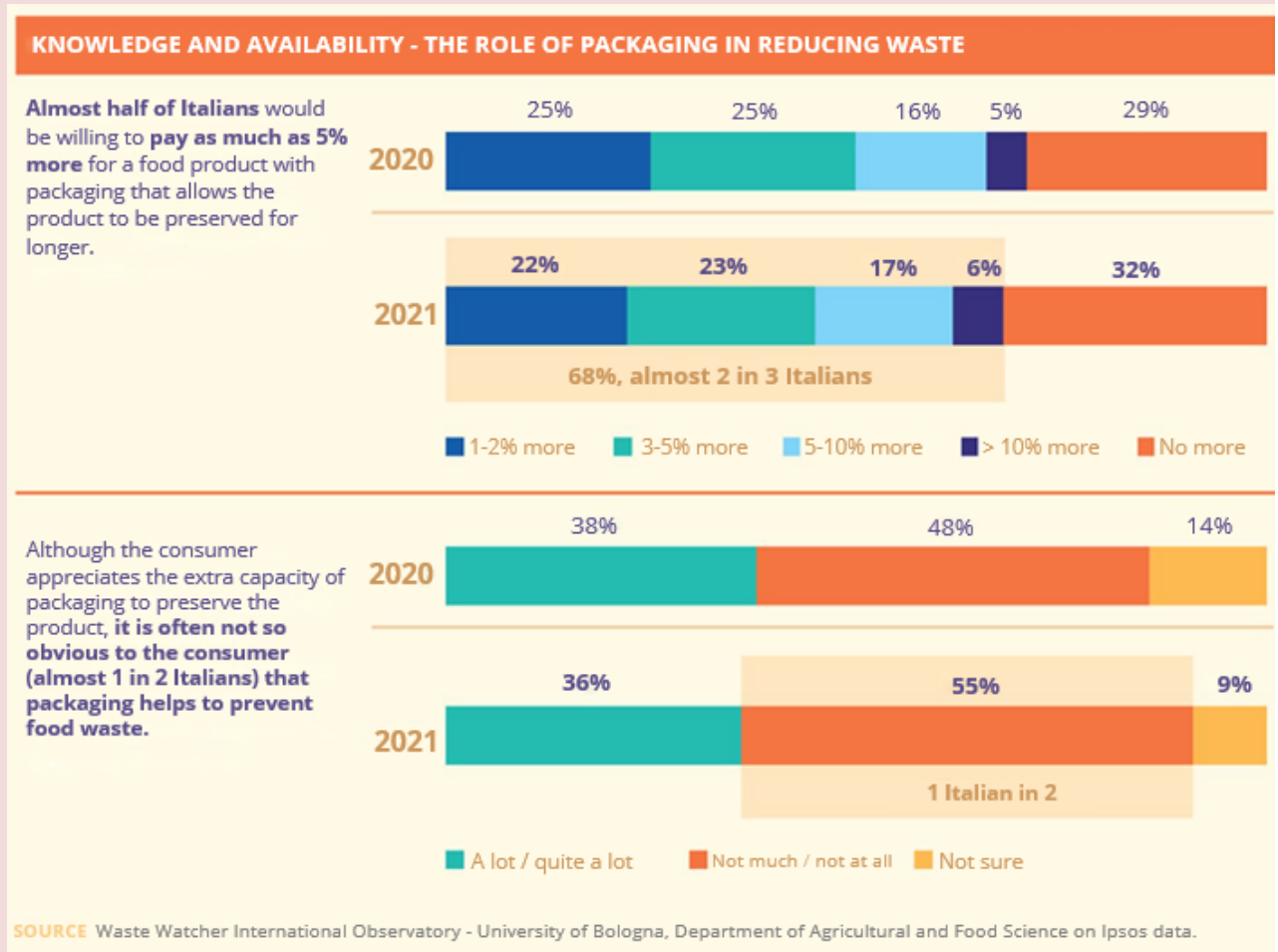
Again in 2021, a partnership was launched with the **Waste Watcher International Observatory** on the issue of food wastage, an area in which packaging plays a fundamental role as a prevention tool.

WASTE WATCHER INTERNATIONAL OBSERVATORY

The study showed that the qualities of packaging that are most recognised by consumers concern the information about the expiry date and storage of the product. In addition, it is also important for the consumer that the packaging shows clear, legible and transparent information about the product it contains.



The ability of packaging to preserve food is instead appreciated by almost 2 out of 3 Italians, to the extent that 68% of consumers express willingness to pay more for packaging that allows the product it contains to be stored for longer. And yet, despite this last piece of evidence, half of consumers are not always aware that this ability actually reduces product wastage.



In continuation of this initiative, CONAI will promote international surveys, the results of which will be incorporated into Waste Watcher International's Cross Country 2022 investigation on Food Packaging.

Index of second raw material prices

Given the centrality of the evolution of second raw material prices, the twice-monthly monitoring between CONAI and Prometeia was consolidated to survey the main price lists of virgin and second raw materials for packaging. The Observatory proved itself to be a useful supporting tool for the decisions on the review of the values of the fee.



A survey was published in 2021 (see box below), collaboration with ReMade In Italy, on the use of recycled material and on the awareness of GPP among companies manufacturing and using packaging, as a result of which the guidelines were established on **Green Public Procurement and CAMs (minimum environmental criteria) – Packaging. Guidelines for companies participating in public tenders**, supporting companies that intend to engage in GPP and public tenders¹⁵. The document provides the necessary guidelines to be able to participate in public tenders that are aimed at providing products and/or services for which minimum environmental criteria (CAM) are required, with particular reference to packaging. It then summarises the existing and current CAMs, the criteria for packaging and the relevant means of proof to support verification of the specified criteria by the public administration.

The analysis will be monitored and updated in line with the evolution of the legislation.

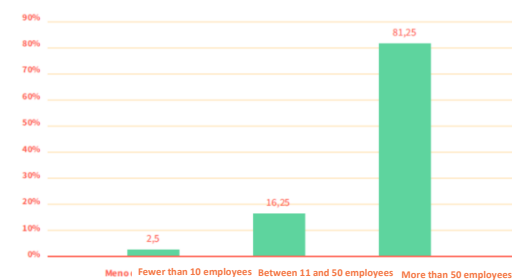
SURVEY ON THE USE OF RECYCLED MATERIAL IN THE PACKAGING INDUSTRY AND GREEN PUBLIC PROCUREMENT IN ITALY

The survey involved a sample of Italian packaging manufacturing companies, which were questioned on aspects related to some particularly topical environmental issues: the use of recycled material and by-products, purposes, interest in environmental certifications, degree of compliance with regard to CAMs (minimum environmental criteria), and participation in public tenders.

FIG. 1 - COMPANY SIZES (MANUFACTURERS)



FIG. 29 - COMPANY SIZES (USERS)



More than 60 per cent of the companies that responded to the survey use recycled material for packaging manufacture or require that packaging be made from a percentage of second raw material. A few companies have shown interest in doing so in the future.

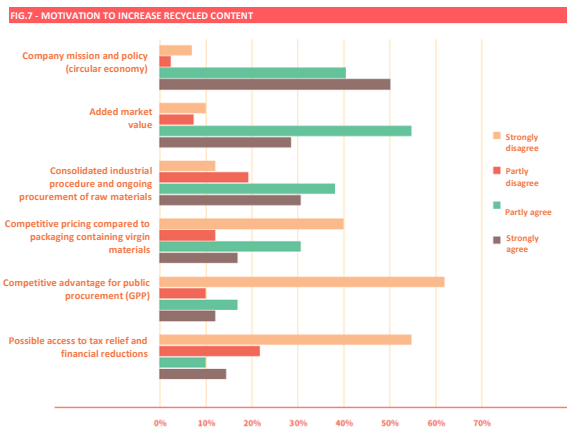
The types of packaging most affected by the use of recycled material are bottles, boxes, flexible films, pallets and transport packaging, packets and bags, and are made with mostly

¹⁵ Both the survey and the guidelines are available in the document download and study and research sections on the website www.conai.org.

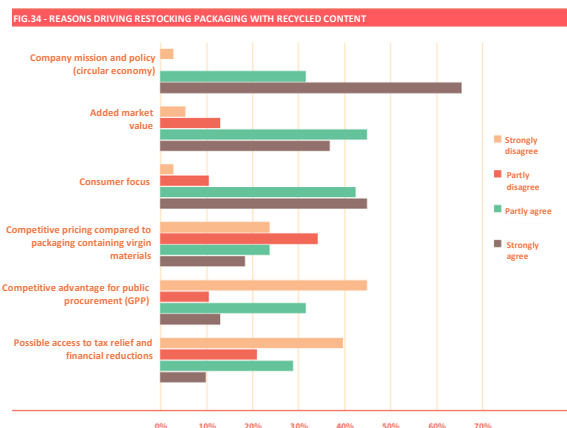
paper, plastic and wood materials. We know from experience (see also *Success stories* at conai.org) that also in the steel, aluminium and glass packaging supply chains, the use of recycled materials is now common practice.

The main driver for companies to use recycled material to produce packaging or to require packaging made with recycled content is the business strategy and added value in the market, whereas this driver is weak when it comes to the competitive advantage for green public procurement (GPP).

producers



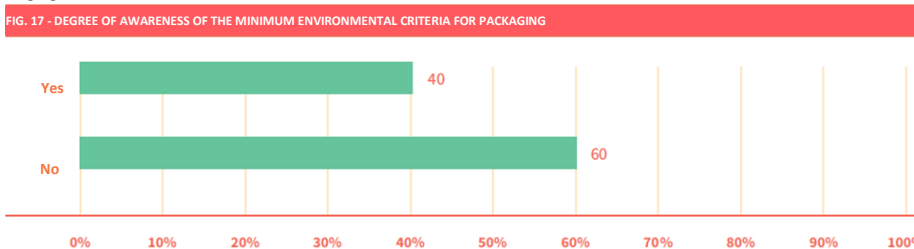
users



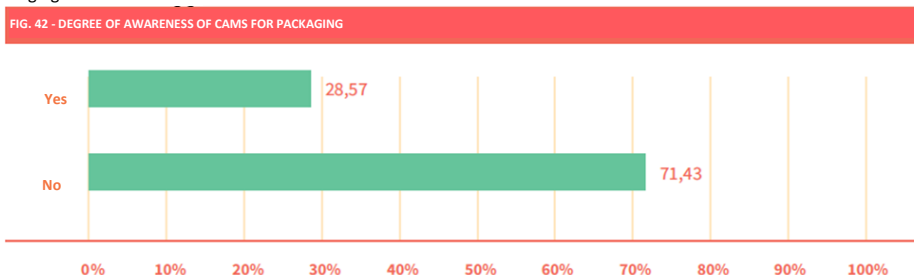
On this last aspect, it should be noted that the study also reports on the minimum environmental criteria (CAMs) for packaging with respect to products/services that are subject to public tenders and for which the relevant CAMs are envisaged, and highlights how recycled content is a rather common requirement.

According to the results of the survey, there is still little awareness of CAMs and perhaps this explains why companies do not consider GPP to be a driver to increase the use of second raw materials.

packaging manufacturers

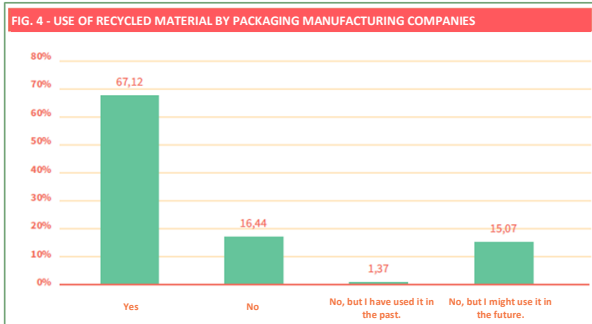


packaging users

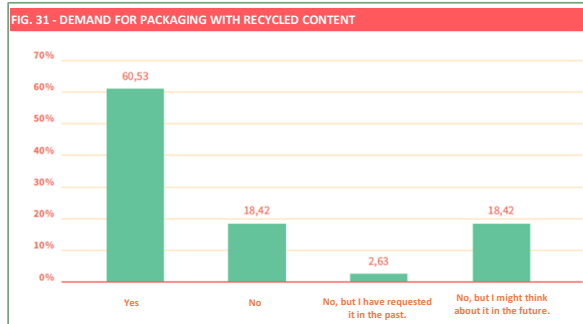


CONAI promotes GPP as an additional opportunity for companies to gain market share starting with virtuous actions in application of circular economy principles. As the following graph shows, the survey reports companies that are already ready and compliant with the CAMs.

producers



users

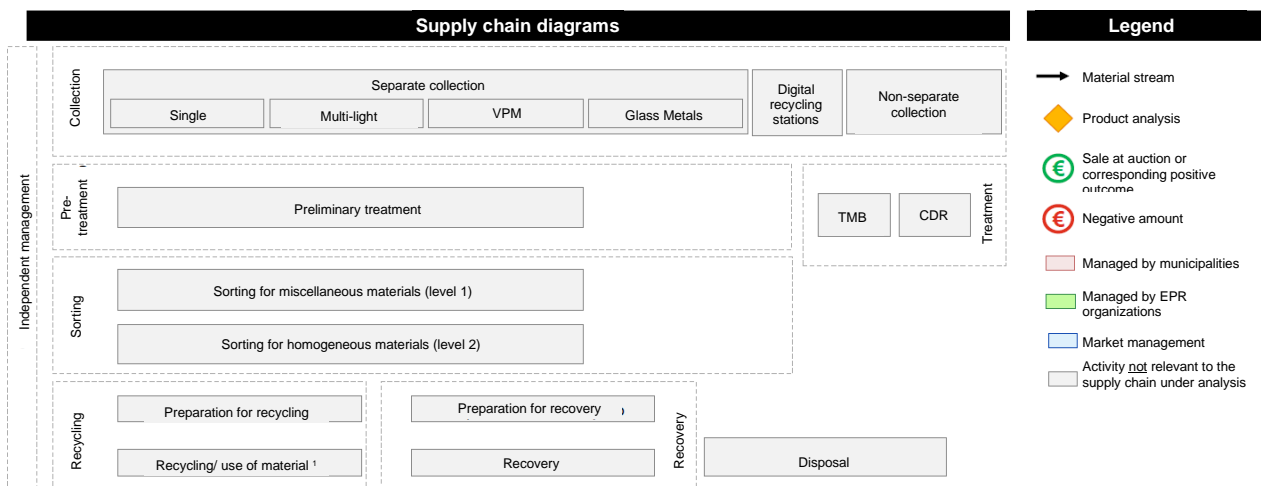


Information and dissemination of knowledge on GPP and CAMs should therefore be boosted, on the one hand, and on the other, communication of the environmental characteristics of packaging such as, the recycled content, including through existing certifications.

Analysis of the supply chain streams

Within the path of adjustment promoted by CONAI regarding the Framework Programme Agreement and in partnership with PWC-Strategy&, a single supply chain model was shared at the common panel, which was subsequently declined for all fractions. The work was carried out with the main aim of defining a general taxonomy relating not only to the collection stage (with the coding of the different types of collection, such as multi-light) but also the individual treatment and recycling stages. Through this study, it was possible to use unambiguous terms across all the supply chains and to identify all the transactions, both material and financial, of the packaging supply chain on a single diagram. The full analysis will soon be available on the institution's website.

Template used for the schematisation of supply chains and detailed key to the information mapped



2.7.2 International activity

As part of the technical standardisation activities for 2021 **UNI, EN ISO, CONAI** chaired the Packaging Technical Committee (TC) of the UNI (Ente Nazionale di Unificazione [Italian National Unification]) regulatory body, and represented it as head of the Italian delegation to the Packaging Technical Committee for the European Committee for Standardisation (CEN). In UNI CONAI launched activities for the development of the **UNI standard “Determination of the quantities of packaging waste generated, recycled and recovered with energy production”** which will be developed in Working Group 7 “Packaging and Environment” of the UNI Packaging TC, to which the other UNI TCs concerned were invited to participate.



At the same time, and as mentioned above, CONAI is participating in the working group to draw up of the **UNI reference practices “Guidelines for the monitoring and verification of municipal waste streams for the purpose of reporting for the calculation of recycling targets”**.

As part of the 2021 activities envisaged **under the Framework Agreement between the Istituto Italiano Imballaggio [Italian Packaging Institute] and CONAI**, 3 editions of the course **“Green Packaging Expert – Know the legislation and management systems for packaging. Publicise and plan sustainability for packaging”**. The work of the Institute's

Packaging and Environment Commission continued, chaired by CONAI, continued which published and presented at an ad hoc event, the second volume of the “**Guide to the Environmental Management of Packaging – What to do when exporting to EU 13 countries**”.

In April 2022, the updating was completed for the second edition of the first volume of the “Guide to the Environmental Management of Packaging – What to do when exporting to EU 15 countries”. In the coming months, the volume will be published and officially presented through an ad hoc event.

The website www.packaging4recycling.eu was updated as part of the 2021 activities of the EXPRA Sustainability & Packaging Working Group, chaired by CONAI. The site is a tool for self-assessment of the recyclability of packaging placed on the market in each country based on the reference documentation uploaded on the portal. The tool was implemented with a new section, directly accessible via the home page, specifically on the environmental labelling of packaging in foreign countries



As a corollary to all international activities, in 2021 the serviceinternational@conai.org, to support to Italian stakeholders on the management of packaging abroad and vice versa supported 310 requests.

2.7.3 Skills training and development projects

Consistent with the lines envisaged in the General Programme for the Prevention and Management of Packaging and Packaging Waste, in 2021 CONAI was particularly active in promoting initiatives and projects aimed at training and developing skills in the field of the circular economy.

Class recycling - The 5th edition of the project for primary schools ended in June with the educational competition, organised together with Corriere della Sera. Almost a thousand entries were submitted by 259 classes from 116 schools. Despite the difficulties associated with the partial isolation experienced by the young children, a large number of entries arrived from all over Italy. Among the winners were schools from Sicily, Sardinia and Lombardy.

On 1 October, the launch event took place with a new staging of the play “Dipende da noi” (It depends on us) in Milan, streamed live on Corriere.it: 595 teachers connected with the classes, approximately 15,000 children (calculating an average of 25 children per class). 3,000 copies of the new teaching kit for primary school teachers with the 7 packaging materials were prepared and distributed. The site www.riciclodiclasse.it has been updated with new content and the video of the new show.

Green Jobs - University of Palermo - The collaboration with the University of Palermo led to the organization of a third postgraduate training course in another important region of Southern Italy. From 21 June to 16 July 2020 four weeks of specialised postgraduate training on waste management was provided, with live streaming of lectures of an hour and a half by qualified experts on environmental issues, final assessment tests and issue of certificates to the 80 Sicilian participants, who were recent graduates in engineering, science, technology and law of between 25 and 30 years old, selected through a call for tender. On 22 October a day was organised at the university to present certificates to the students who attended the course.

Green Jobs - Mediterranea University of Reggio Calabria - In the second semester, a second online training course was launched, from 8 November to 3 December, for 85 graduates in science and technology subjects, in cooperation with the Mediterranea University of Reggio Calabria. At the end of the course, a study day on waste management and the presentation of certificates were held at the university.

Green Jobs - Campania - At the end of the year, an agreement was signed with the Promos Ricerche university consortium and the Scuola di Governo del Territorio to launch a four-week training course on Green Jobs for 80 graduates in early 2022.

Agreement with the Tuscia University - The bilateral scientific cooperation agreement for the study of the eco-design of packaging and technologies for the recycling and recovery of materials was signed in order to: contribute to the training of students and graduates, in particular for the Design for Sustainable Industry and the Territory degree; promote the development of skills through the enhancement of degree theses; and to develop research on topics of mutual interest. The agreement also involves the awarding of two prizes to the two theses on the topic of the circular economy of packaging.

Three-year partnership with ENEA - Work started with the research organization to draw up a roadmap that in 3 years would lead to the drafting of 6 experimental degree theses related to the areas of common interest, to be carried out at ENEA research centres with traineeships on the issues of waste management and the circular economy.

In addition, various **initiatives and projects for young people** were promoted, involving design, film and fashion as vehicles to promote issues on environmental sustainability, recycling and the circular economy.

Oggetti di design in materiale riciclato - the collaboration with the Polytechnic University of Milan, which involved students on the PoliDesign master's and three-year degree courses with workshops and in-person lectures, concluded with the creation of iconic objects to be used as prizes and gadgets on various occasions, such as the Fenice (prize for companies and journalists) and the Giano (reserved for stakeholders).

The Upcycling Challenge - The "Sustainable Creatives" project. Launched on 31 August in Vogues Talents and on vogue.it, the initiative gave young talents from the world of fashion the opportunity to create a capsule collection of sustainable clothing. The applications, which were open until 14 November, were reserved for university students in their final year of courses related to creativity, fashion and art, talents who have completed a maximum of one year's training, and designers who have between one and three years' experience. The 7 packaging materials used to create the collection or as accessories that complement it, to be transformed into yarns, fibres, buttons, coat hangers, labels or other items. A panel was composed of members from CONAI and Vogue to choose the winner.

Collaboration with Giffoni Innovation Hub - Collaboration started with the Innovation Hub and the meeting with the Giffoni Film Festival crew between the 21st and 31st July 2021, during which the survey "Ciak si gira, azione: riciclare" (Lights, camera, action: recycle) was launched. A short film and Insta-movies for social media will be created based on the results of the survey, and will be presented during the next edition in 2022.

Additionally, on the topic of **environmental labelling for packaging**, CONAI:

- joined **Associations and organizations** in **22 meetings** for companies;
- in partnership with TuttoAmbiente, put on 3 editions of the training course **“Environmental Labelling Expert”** with the aim of developing professional skills on the topic, with consultants and representatives from associations and chambers of commerce. **121** experts successfully completed the course in 2021 and the list of their names and contacts can be found at www.etichetta-conai.org available for companies needing direct consultancy.

2.7.4 Communication

Communication activities for 2021 were developed with the aim of accrediting CONAI as an influential player in the circular economy by enhancing the unique and distinctive elements of the EPR organization, such as the provision of “best practices” to companies on issues such as recyclability and environmental labelling, the promotion of culture in relation to quality separate collection, recycling and the circular economy.

Company targets

CONAI Academy

Several webinars were held during the year, mainly aimed at companies, which covered topics such as the new Guide to Environmental Contribution, packaging labelling, fee modulation and also the launch of the Eco-design Call for companies.



SUBJECT	DATE	TARGET	NO. REGISTERED	NO. PARTICIPANTS
New Guide to CONAI Environmental Contribution 2021 features - Dialogue with the associations	9/2/2021	Associations	684	500
New Guide to CONAI Environmental Contribution 2021 features - Dialogue with firms	11/2/2021	Companies	5,288	3,900
Environmental labelling - help us to help you	17/2/2021	Associations	200	95
Environmental labelling - CONAI responds	17/2/2021	Companies	3,482	2,500
CONAI eco-design call presentation	18/3/2021	Companies	599	480
Guidelines for the voluntary labelling of packaging	20/5/2021	Companies	4,173	3,823
Plastic modulated fee + design for recycling guidelines	26/5/2021	Associations	100	87
Webinar on new mandatory labelling standards developments	23/6/2021	Companies	2,700	1,300
Fee modulation for packaging and design for recycling	8/7/2021	Companies	4,982	4,203
Environmental labelling for packaging: 2021 innovations	26/7/2021	Companies	2319	1900
ANCI-Biorepack technical annex presentation	20/10/2021	Companies	232	385

CONAI Academy Week - Question of labelling. With the partnership of 21 associations and packaging material consortia, CONAI organised a total of 9 digital events in the week between 27 September and 1 October 2021, one per specific industry sector, to deal with the queries shared by companies and gather experiences on the subject of the environmental labelling of packaging. There were almost 7,000 participants. On this occasion, the Call for Good Ideas was launched to collect virtuous cases of environmental labelling from companies and reward the 7 “best ideas” that distinguished themselves.

The creation of the CONAI Academy Community. Over the course of the year, after a test phase in cooperation with the associations, activities were started to enable the launch of the CONAI Academy Community in December 2021. CONAI’s Community is the first platform in Italy to provide support and guidance in activities related to packaging and the circular economy. The platform is aimed at companies, associations and all stakeholders in the packaging chain that are interested in these issues. The purpose of the Community is to provide a digital environment for networking, where members can share problems and solutions with other stakeholders on the platform, and at the same time, keep up-to-date on the world of CONAI, on packaging and on the circular economy. In particular, the topics that attracted the most interest from users during the first weeks of the platform's launch were:

- Environmental labelling for packaging;
- CONAI environmental contribution;

- Updates on regulatory issues;
- The classification of packaging/non-packaging.

A specific area of the CONAI website was set up for access to the Community, where a video presentation can be viewed that shows how the platform works. At the time of writing, there were over 4 thousand members in the Community.

Publishing partnerships

Also in 2021 the initiative was continued to give visibility to the Eco-design Call and, above all, to the companies that won awards. With **Economia d'Italia by Economia del Corriere**, a tour of regional steps was created, dedicated to businesses and issues on sustainable innovation, with live streaming from the Economy section of Corriere.it The protagonists were the winning companies of the 2020 Eco-design Call, which took part in digital events between May and October: Ecopack (Piedmont), Selene Group (Tuscany), Madel (Emilia Romagna), Colgate Palmolive (Lazio), Zero Company (Apulia), Contital (Campania), SDR Pack (Veneto), Allegrini (Lombardy).

The Economy of the Future: on the 10th and 11th November the closing event for the Milan Triennale took place, with attendance both virtually and in person, with live contributions from CONAI and the companies. Two days with international protagonists for the green and just transition to explore the best practices of companies committed to sustainability to achieve the UN 2030 Agenda. On the panel were companies rewarded by CONAI (in particular the 5 top winners) for the 2021 call for the eco-design of packaging in the circular economy.

Noi Per Voi – Radio 24: the media partnership, as every year, involved the broadcasting in November and December of a CONAI radio broadcast “pills” which had the task of explaining the functioning of the CONAI EPR Organization and the Packaging Material Consortia, the Environmental Contribution, the results achieved and the main ways to join.

Industry events

RE Economy Summit (Best Packaging award): on 19 October the digital event took place in cooperation with the Italian Packaging Institute, with the presentation of the research commissioned to the Sant’Anna School of Advanced Studies on “The role of the consumer in supporting the circular transition”, while the 2021 Best Packaging award took place at the end with company testimonials from award winners.

Connex – Milan Fair. The consortium attended the “Confindustria Connex” exhibition in Milan on 2 and 3 December. An opportunity for companies, economic partners and the public administration to engage in discussions, with the participation of CONAI at the conference on

“Environmental Labelling of Packaging” and the presentation of some cases of excellence in environmental labelling, awarded by CONAI.

Institutional targets

Ricicla TV webinars - A series of online meetings were held to discuss various open matters such as the PNRR in its implementation stage, the achievement of European recycling targets for 2035, but also CONAI’s green economy report. There was a strong participation from the presence of Institutional stakeholders such as the Ministry of Ecological Transition, ANCI and Confindustria.

Meeting in Rimini - The 2021 edition (20–25 August) returned to the Rimini Fair with 480,000 visitors. In addition to the institutional meetings, CONAI attended the ‘Human Capital and Economic Development’ conference with the Ministry of Economic Development, Giorgetti, CEO and General Manager of TIM, Gubitosi, and Chief Institutional Affairs and External Communication Officer of Intesa Sanpaolo, Lucchini.

Side Event - G20 Environment - An institutional event held in Naples on 22 July 2021 with reflections on Italy’s role in the face of challenges such as the G20 Presidency, COP26 and Italy’s PNRR, with the participation of CONAI at the round table “L’Italia cuore della transizione europea giusta e sostenibile” (Italy at the heart of a just and sustainable European transition) with Confindustria Vice-President Piovesana, ISPRA Director Bratti and Department Head of the MiTE, D’Aprile.

Green Symposium 2021 - The event was held in Naples on 15–17 September and was also available online, and had over 35,000 viewers. It was an opportunity to promote the activities carried out by CONAI in the south of Italy through the launch of a manifesto on the “Cinque mosse per uno sviluppo sostenibile del Mezzogiorno” (Five Moves for Sustainable Development in the South of Italy). Several round tables in which the Consortium took part, along with Mara Carfagna - Minister for the South, Fulvio BonavitaCola - Vice-President of the Campania Regional Government, Vito Bardi - President of the Basilicata Regional Government, to name but a few. On this occasion, the start-up project Circular South was launched.

Ecological Transition COP26 and G20 working together to get the country back on its feet - One or two days in Trevi on 24–25 September, dedicated to Italy’s role in the face of challenges such as the G20 presidency, COP26 and the PNRR. CONAI participated in the round table with several parliamentarians from the Environment Committees of the House and Senate and main stakeholders from the environmental sector.

Ecomondo Fair - The EPR organization's decision to attend Ecomondo proved successful, emphasising the importance of showing signs of relaunching. There was positive evidence in terms of exhibitors, but above all, in terms of visitors. The rationalisation and redistribution of space within the CONAI-Consortia exhibition stand helped make an increased visual impact. Among the events organised in hybrid mode with Ricicla TV was the presentation of CONAI's Sustainability Report. The School of Advanced Training by IEG and the University of Bologna was also launched. Together with the Consortia, the media partnership with Radio 24 and Radio Rai was strengthened.

Enhancement of activities with ANCI

Biorepack Technical Annex Webinar - On 20 October there was the start of the set of webinars for the training of local administrators with the presentation of the new ANCI-Biorepack technical annex. The activity is part of the two-year training programme, within which there is a set of five webinars on the various packaging materials is planned to explain how municipalities can enter into agreements with consortia, what commitments they take on and what benefits they can gain from them.

ANCI-Ambrosetti Circular Economy Discussions - 3 half-day live streamings were organised with an advanced level training course with the aim of supporting municipal administrations (mayors, councillors and key managers) on strategic and operational tools for the implementation of Circular Economy models, such as the ANCI-CONAI Framework Agreement and the initiatives to support the south of Italy.

Target citizens

The Biorepack campaign. The new social media campaign by CONAI and the Biorepack Consortium was launched, titled "Oltre le apparenze" (Beyond Appearances), with the aim of improving the separate collection of organic waste through the correct disposal of bioplastic, biodegradable and compostable packaging. The "Oltre le apparenze" campaign was planned between May and July on social media channels YouTube, FaceBook and Viralize (programmatic), with two videos with different subjects.

A second campaign, "**Sacchettino Bio**" (**eco bag**), was also planned, based around the well-known catchphrase of "Il pulcino Pio" (Pio the chick), which served to further explain that small bags used for buying food are not plastic, as they might appear, but can in fact be used to collect organic waste and other bioplastic products. The campaign was planned between August and November to appear on Radio Italia, YouTube and Facebook.

Spreco Zero (zero waste) campaign - CONAI supported the initiatives of the public campaign for the prevention of food waste “Spreco zero”, organised by the Waste Watcher institute – International observatory on food and sustainability, for a common reflection on adoptable best practices. In particular, the focus was on the role of packaging in product storage and information, but also on the aspect of waste prevention in relation to the food we consume every day.

Partnership with Eataly - CONAI and the Consortia joined the project to run an awareness-raising campaign on separate waste collection and recycling at the Eataly Lingotto shopping centre in Turin, which takes the form of interactive terminals for advertising, videos, and notices set up for customers at the point of sale, accompanied by an invitation: “Una buona spesa è fatta anche di buone informazioni!” (Shop wisely to shop well).

2.7.5. Press relations

Social media activities

Social media management activity resumed as normal after the natural slowdown in 2020, when – during the two waves of the pandemic – posts were scheduled less frequently in accordance with the general climate of uncertainty.

The more institutional channels Twitter and LinkedIn, continued to convey corporate and topical information, also to inform the business world and institutions about CONAI’s activities and projects still in line with the information conveyed through media relations activities. Certain posts, also made with specially created graphic materials, were designed for the promotion of major events such as the Green Jobs project and the Eco-design Call.

Facebook became the channel for more generalist edutainment, targeting an informed and involved community, looking for new ways to talk and get people talking about separate waste collection and recycling. A possible shift in tone of voice and content towards a more institutional and high-level leaning is being developed.

The more aspirational positioning of Instagram proved to be effective: it combined a love of beauty and a love of the environment through stories and images that were artistic and fun at the same time.

In accordance with the new slowdowns that the first part of 2021 brought due to COVID, work continued on the relaunching the YouTube channel to bring it to life as more than just a

repository of CONAI videos, with attempts to reach a younger target viewer. Collaborations were finalised with YouTube personalities who are very popular among the very young: ErenBlaze, a youtuber with 800,000 current subscribers, who “lives” the world of Minecraft (a well-known video game set in a world made of blocks) and who imagined the “recycling cycle” there, and with Leo and Bertra, a pair of youtubers who are also friends in real life (almost 700,000 subscribers in total) struggling with an unprecedented trash-test.

Press office activities

Press office and media relations activities continued, despite the aforementioned difficulties related to the health emergency that made in-person meetings in editorial departments or at CONAI impossible for many months, to consolidate the Consortium's relationship with the main national and local media and news outlets (press, web, radio and TV) and to increase awareness of the EPR organization, enhance its activities and maintain its reputation.

The promotion of interviews with chairs, managers or other CONAI area managers continued. Press releases and press notes were created and released, as is normal in media relations activities, and naturally, new ideas for new topics were discussed on the spot with those responsible for the news outlets.

Press and media relations explored new avenues towards media visibility, supporting the Consortium's needs related to the emergency situation, taking advantage of opportunities such as World Recycling Day (18 March, when the recycling forecasts for the country were announced) or other occasions related to environmental issues.

Among the most pressing issues, which continue to be essential assets for CONAI's press office, are the data on recycling results, which are announced between June and July, and those of the Sustainability Report, albeit sacrificed in a chaotic context such as Ecomondo.

Particular emphasis was placed on disclosing regional data to the local media, with specific interventions to raise awareness among local journalists on their regional governments' deliveries to the CONAI system.

Others include activities carried out at co-signed events or occasions, such as those with ANCI.

As the area is responsible, we participated in the drafting and implementation of specific projects and the creation of infographics that could support media relations activities and, as a consequence, those of other areas.

The press office continued to support the workshop *Materials Matter*, created in partnership with the Polytechnic University of Milan, particularly in the development of the CONAI Phoenix, the winning statuette in the award category.

A new competition for journalists was developed: the CONAI Phoenix for Young Environmental Journalism. Aimed at journalists under the age of 41, it will award a radio or TV report and a written article on the circular economy and recycling. The presentation of prizes is scheduled to take place at Ecomondo 2022

There is also a new seminar for members of the Association of Journalists, which is useful for compulsory training credits. The programme also includes personalities from the institutional and academic worlds and has been drawn up and finalised. It is expected to be implemented in a few Italian cities where the regional orders are based during 2022.

The Upcycling Challenge, in partnership with *Vogue Italia*, aimed at talented young fashion designers was completed successfully at the end of 2021. Announcement of the winners and awarding of prizes was scheduled during 2021.

Relations with third-party press offices (of Rimini Fiera exhibition group, the Sustainable Development Foundation, etc.) were not suspended and neither was the evaluation of proposals, offers and media partnerships.

All internal reporting and information activities are carried out regularly, starting with the press review.

2.7.6 Supporting consortium members and protecting fair competition

Also in 2021, the extraordinary health and economic situation required extreme flexibility in managing of relations with consortium members, who were affected by the emergency-related events, albeit in different ways depending on the sectors in which they operated.

For the usual support activities for consortium members, forms of interaction such as videoconferencing were preferred where possible (which made it possible to involve larger audiences with reduced costs). In this context, key initiatives include:

- the usual updating, awareness-raising and communication campaign on consortium obligations was implemented, through the mailing of around 1 million **notices** to consortium and non-consortium members;
- assistance to companies and associations was guaranteed through the dedicated toll-free number, with about 82,000 **telephone contacts**, which rose considerably compared with the previous year;
- several thousand **written requests for clarification** on consortium procedures were received through the various channels available;
- **training seminars** were held for companies and officials from national and regional trade associations representing packaging producers or users, as well as an end-of-year campaign through radio advertising (in partnership with Radio 24). Video recordings of some of the seminars on the CONAI 2021 Guide's updates and procedures for the application, declaration, exemption and modulation of the environmental contribution were provided on the CONAI website as part of the CONAI Academy, described in the sections below, referring to the two webinars held for national and regional trade associations (500 participants) and for companies (3,900 participants);
- the **FAQs section** of the CONAI website was extended, with an update of the questions taking into account new changes introduced and the most frequent issues addressed, which were mainly dedicated to the diversification of the environmental contribution for paper and plastic packaging as well as the changes in the environmental contribution values determined in 2021 with effect from 2022;
- **free-of-charge consultancy** was offered by CONAI to consortium members submitting environmental contribution declarations for larger amounts, if requested by them – to verify that the application, declaration, payment and exemption procedures for the contribution were up to date and correct.

Simplifications

The main simplifications and concessional terms of the application, exemption and declaration procedures for the environmental contribution determined in 2021 (some of which with effect from 2022) and affecting particular types and/or streams of packaging are:

- an (ex-ante) environmental contribution exemption procedure reserved for consortium members who purchase packaging for export only (CONAI circular of 01/12/2021 and for 6.5 Supplier-Bis ex ante exemption);

- a refund procedure for the environmental contribution on wastage generated during the self-production of packaging by processing raw materials already subject to the contribution (CONAI circular of 21/10/2021);
- the extension of the consortium members who are able to benefit from the exemption from the environmental contribution declaration or submit the declaration annually instead of quarterly, as they handle minimal packaging streams. This is achieved by increasing the exemption thresholds from EUR 100 to EUR 200 for ordinary procedures and from EUR 200 to EUR 300 for simplified procedures, as well as the maximum threshold for the annual declaration from EUR 2,000 to EUR 3,000;
- the updating of self-declaration form 6.11 with additional cases of incentive procedures already existing reserved for reusable packaging used in virtuous return systems;
- a possibility for consortium members to rectify environmental contribution declarations online by means of reversals and/or additions to declarations, even if already invoiced by CONAI.

The “*Guide to joining and application for the CONAI environmental contribution*” was updated in 2022 with the aforementioned changes, with a new design and in a browsable interactive version for ease of reference.

ACTIVITY OF THE SIMPLIFICATION WORKING GROUP

Over the course of 2021 the “Simplification” board working group continued the in-depth studies provided for in the shared three-year programme in relation to the topics and projects under study.

In addition to the facilitations/simplifications described above and reserved for particular types of packaging or economic sectors (such as packaging intended for export from the outset, “self-produced” packaging, reusable packaging and wooden pallets – new and put back onto the market – which conform to codified specifications within controlled production circuits), on the group's proposal, the CONAI Board of Directors extended the range of consortium members who will be able to take advantage of the exemption from the contribution in the case of exports of filled packaging already declared to CONAI under the simplified import procedures (further increasing the contribution threshold declared under these procedures in order to have access to the refund).

Among the major issues within the competence of the group, which have already been presented to the Board of Directors, in-depth studies continued aimed at forms of

simplification of the declaration that take into account both the most modern information technologies (such as electronic invoicing) and the standardisation of the weights of packaging for goods of foreign origin, which are also marketed through the ecommerce channel.

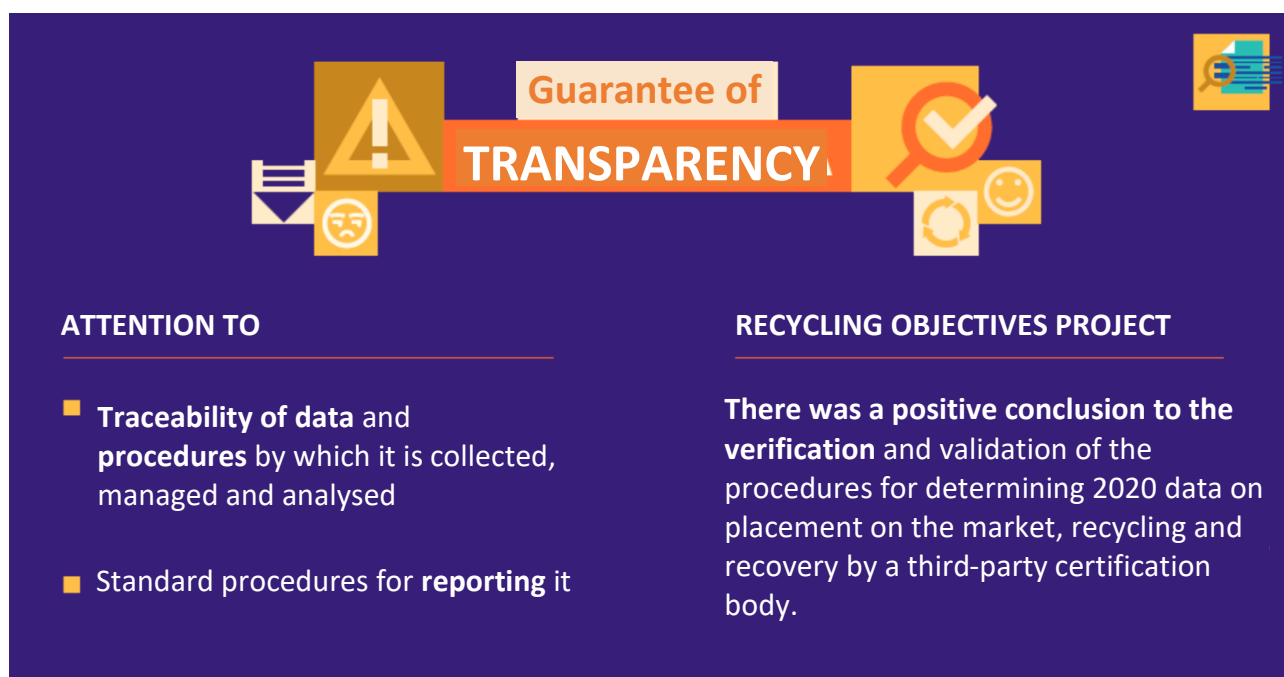
3.

Results

This chapter presents the qualitative and quantitative results achieved during 2021, which are the result of measures implemented over the years by CONAI, packaging material consortia and the self-compliance EPR organizations;

There are two important changes compared to last year:

- the streams (input and recycling) for plastic packaging (traditional and biodegradable/compostable) were also detailed separately for EPR;
- the report presents an initial assessment of the impact of the reporting system for the new 2025 and 2030 targets on the current final recycling results. In particular, as stipulated in the *European Guideline of April 2022 on the completion and reporting of packaging and packaging waste data in accordance with EC Decision 2005/270*, the 2020 and 2021 data are presented using both the “old” method of calculation (for the purpose of verifying the achievement of the targets currently effective) and with an initial representation compared with the “new” method (for the purpose of a preliminary verification of the recycling targets expected from 2025).



The infographic features a central orange banner with the text 'Guarantee of TRANSPARENCY'. To the left is a yellow warning triangle icon, and to the right is a magnifying glass over a checkmark icon. Below the banner are two columns of text.

ATTENTION TO	RECYCLING OBJECTIVES PROJECT
<ul style="list-style-type: none">■ Traceability of data and procedures by which it is collected, managed and analysed■ Standard procedures for reporting it	<p>There was a positive conclusion to the verification and validation of the procedures for determining 2020 data on placement on the market, recycling and recovery by a third-party certification body.</p>

There has always been a broad scope for data reporting with reference to recycling and recovery results, which are the priority for CONAI for intervention and action as the guarantor, by law, of the achievement of the targets at national level. It is therefore on this issue that we have chosen to invest further, providing for a special validation process of the procedures for determining data on placement on the market, recycling and recovery, which is submitted annually for validation by a third-party certification body (see *Recycling Objectives*) and on which improvement actions are ongoing to refine the data provided to the institutions as much as possible. The positive results of this investment in terms of data reliability and transparency of managed streams was also recognised by the EXPRA report “Analysis of Eurostat packaging recycling data: a study of the years 2006–2012”.

It is a different matter, however, to define and track information on the achievement of the other expected targets, which concern prevention activities, understood as prevention at source, increasing the share of recyclable packaging and developing the practice of reuse. Here CONAI promotes a number of drivers already described, the results of which can, at present, be reported with a qualitative and quantitative approach on the basis of the information made available because it is monitored by specific stakeholders (consortia, associations, research institutes, universities, statistical institutes) or because it is the direct result of the (optional) actions implemented directly by CONAI and/or packaging material consortia and recognised self-compliance EPR organizations.

3.1 Packaging put on the market

The data on packaging put on the market is the first useful information for determining the prevention, recycling and recovery performance achieved for packaging and packaging waste, since, according to EC Decision 2005/270 in Article 2 "packaging waste generated in a Member State may be deemed to be equal to the amount of packaging placed on the market in the same year within that Member State”.

3.1.1. Analysis and determination of data

For 5 supply chains (steel, aluminium, paper, wood and biodegradable and compostable plastic), the data reported are mainly the result of analyses and developments based on the declarations made by the consortium members to CONAI with the periodic environmental contribution declaration procedures in 2020 and 2021 (known as “equivalent subjected

amounts”). Similarly, for the plastic supply chain, the data on packaging placed on the market is determined by analyses and developments based on the declarations made by the consortium members to CONAI with the periodic CONAI environmental contribution declaration procedures and the quantities placed on the market declared by the recognised autonomous systems within their respective competences. Finally, the glass supply chain has defined its own procedure for determining the data on packaging placed on the market, which is based on sales in Italy (from the various distribution channels) of glass-packaged goods and then provides for a comparison with the figure derived from the analysis of what is declared to CONAI as well as from other sources.

It is worth remembering that the quantities released for consumption are directly affected by regulatory decisions on the definition of packaging and, at times, present quite a few difficulties in interpretation, since they entail distinctions, even within the same product category, between goods that are packaging and others that are not, depending, for example, on their use (e.g. disposable tableware that is packaging if filled at the point of sale, while it is not if purchased empty by the consumer). This distinction cannot be made once such a good becomes waste and as such is delivered to separate collections.

CONAI has set up a specific procedure for determining the data for equivalent subjugated amounts¹⁶ for determining the figure for packaging placed on the market (see box).

This information is compared with what has been reported in industry surveys conducted for CONAI by the Italian Packaging Institute¹⁷, market surveys carried out by AC Nielsen and other specific sources available to the packaging material consortia in order to duly determine the placement of packaging put on the market in the various materials.

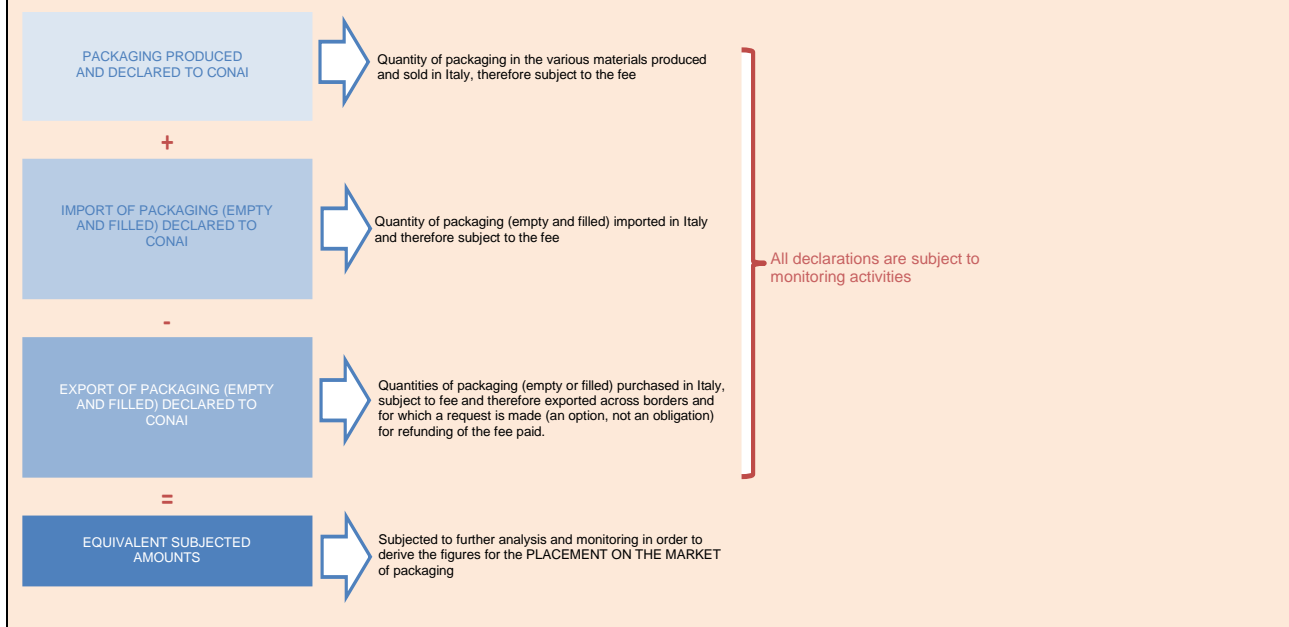
The Contribution is applied at the time of the so-called “first transfer” within Italy, even temporary and for whatever reason, i.e. the time of transfer of the finished packaging carried out by the last producer or empty packaging trader to the first user, other than the empty packaging trader or of the packaging material carried out by a producer of raw material or semi-finished products to a self-producer who is or claims to be such.

¹⁶Equivalent subjected amounts are the packaging quantities periodically declared by consortium members for the different materials, supplemented with the results of the processing of the simplified value declarations to obtain the equivalent weight in the different materials.

¹⁷The analysis conducted by the Italian Packaging Institute for CONAI is based on a calculation model for determining the total amount of filled packaging used in Italy through the determination of the overall consumption of packaging material from qualified and representative samples of the main segments of users and from data available from various statistical sources (ISTAT, trade associations, companies) on the streams of packaged goods produced, consumed, imported and exported, thanks to the use of specific sectoral packaging mixes.

The procedure then provides for some standard analyses and processing to determine the equivalent subjected amounts associated with simplified or flat-rate declarations.

Export figures for empty and/or filled packaging are then subtracted from the quantities declared. There is no obligation to declare these streams, but there is an option for exporting consortium members to request a refund from CONAI on the environmental contribution paid for packaging sent across borders. And it is precisely in view of the lack of claims for refunds of the fee paid for filled packaging sold overseas – a widespread phenomenon among small users particularly in the wine and quality oil sectors and difficult to quantify, that, for the glass supply chain, the COREVE Consortium has decided to adopt a different determination procedure.



Equivalent subjected amounts “obviously” do not take into account the “submerged economy”¹⁸ and, based on declarations to CONAI, may be affected by tax evasion/avoidance, which, according to estimates over the years, may affect the overall result by a maximum of 5%. Finally, the development of e-commerce should also be mentioned, which is mainly linked to the fact that a private citizen buying products directly from another state does not have to declare the import of packaging. This phenomenon is growing significantly and specific analyses on it are under way.

Since the figure for packaging placed on the market is derived from the quantities subject to the fee, i.e. a figure recorded upstream in the value chain for goods consumed in Italy, the

¹⁸ The submerged economy is defined as the activity of producing goods and services that, although legal, escapes direct monitoring because it is linked to tax and contribution fraud

declarations recorded over the course of a year can also be influenced by the purchasing policies and warehouse dynamics of companies, linked, for example, to the trends in the price of raw materials, as well as to the prospects for development in demand. In this sense, the evaluations obtained from fee declarations may also represent an anticipatory index of final consumption.

An analysis of the 2021 data shows a growth of almost 9% in packaging placed on the market compared to 2020, a year in which closures and restrictions on opening and tourism had heavily impacted consumption in Italy. The total packaging placed on the market thus stands at just over 14.3 million tonnes, with clear increases for all supply chains.

The year 2021 saw the continuation, albeit in a softer way, of the consumption and mobility restrictions linked to the Covid-19 pandemic: there were no restrictions on industrial production (as in 2020, when a number of supply chains considered non-essential were closed by decree), while working from home continued in both the public and private sectors, and partial school closures with a switch to distance learning continued. However, other measures by the government have, directly or indirectly, again penalised the hospitality and catering sector, thereby influencing the data on goods placed on the market for some sectors.

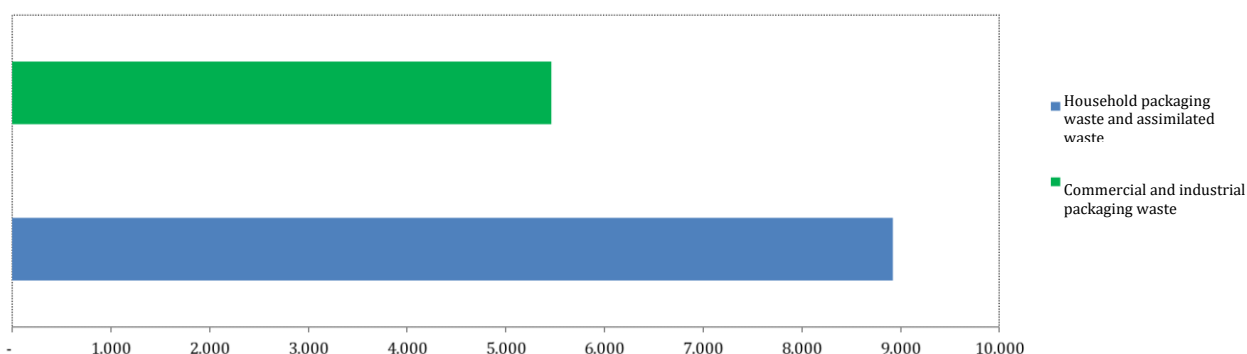
Based on the analyses carried out, the post-pandemic economic situation had already triggered a number of trends, such as the rising values of virgin and second raw materials and the difficulty of finding some of them. These trends were exacerbated by the war between Russia and Ukraine, which further exacerbated these scenarios. This situation has led many user companies to adopt purchasing policies aimed at trying to avoid the expectations of further price increases and, as a result, there has been an increased purchase of packaging.

Packaging put on the market (2020¹⁹-2021)

MATERIAL	2020	2021	Delta
	Ktonnes	Ktonnes	%
STEEL	478	542	13.5%
ALUMINIUM	70	78	11.4%
PAPER	4,720	5,243	11.1%
WOOD	3,053	3,394	11.2%
PLASTICS AND BIOPLASTICS	2,209	2,274	3.0%
GLASS	2,725	2,850	4.6%
TOTAL	13,255	14,381	8.5%

Source: CONAI - Packaging material consortia

With regard to the type of packaging placed on the market, it is estimated that a total of 62% relates to packaging that becomes waste in the municipal stream and the remaining 48% relates to commercial and industrial packaging, which is typically and normally managed on different circuits from municipal SC.



Source: CONAI estimate

It is noted that the growing phenomenon of e-commerce is leading to changes in the design and choice of packaging. In the light of the analyses carried out, it is reported that:

- ✓ according to data from Nielsen, in 2021, e-commerce for products in Italy recorded a growth of +23% (in March 2022, it grew by 2.6%);
- ✓ According to the E-Commerce Observatory, penetration of total retail purchases is 11% (it was only slightly above 9% in 2020) and online purchases have reached almost EUR 33 billion (with further growth expected to reach 14%).

¹⁹Please note that the data presented here also include some changes for the year 2020 related precisely to the verification and validation process of the data on packaging placed on the market, recycling and recovery, which involves the final reporting of the figure after 15-16 months to allow the completion of the analyses on the relevant reporting procedures.

Products purchased on the internet generally require dedicated packaging that effectively protects contents during transit, prevents deterioration with climate change and during transit, and is easy to store and handle. Furthermore, for a company, e-commerce provides an opportunity to implement innovative packaging solutions, especially with regard to logistics, the optimisation of which is an important factor in the creation of an efficient and effective sales model. The growing market of online purchases therefore changes the composition and destination circuit of packaging, with growing usage of secondary and tertiary packaging, for individual units sold, which ends up as waste with the end consumer and is often not optimised like the product it is intended to contain. This phenomenon mainly affects the paper packaging material chain. And it is for this reason that, as early as the beginning of 2000, COMIECO started the first research and promotion of environmentally innovative packaging in e-commerce. To consolidate the path taken, COMIECO became a member of Netcomm (Consortium of Italian Electronic Commerce), a point of reference in e-commerce on the national and international scene. The result of the research and discussion activities of the Netcomm Logistics working group was the publication of the “Guidelines and checklists for the correct use of packaging for e-commerce with the aim of environmental sustainability” in early 2019.

Other elements have an impact on the quality and types of packaging sold, due to changes in society and consumption. In the food sector, for example, high-performance packaging able to ensure the product is protected for longer, or with closure systems that reduce food waste, is increasingly preferred. The trends, reinforced with the pandemic, are in fact linked to packaging with additional features, such as resealable options, the ability to dose the product or mix ingredients during consumption, or even to provide tangible information on the expiry and/or solubility status of the product (e.g. smart packaging). All factors that increase the level of service offered by the packaging sometimes, however, with negative effects on recyclability. Environmental sustainability goals must and will therefore have to contend more and more often with trends in consumption, which reflect social (e.g. the increase in eating out) and demographic factors (e.g. the growth of single people and an ageing population), as well as with other important objectives of product assurance and healthiness, which in the food sector also means reducing food waste. This issue is particularly relevant and is also emphasised by

authoritative institutions such as the FAO, which estimates that the use of suitable packaging could reduce food waste in developing countries by 5%²⁰.

The need to harmonise objectives for packaging performance (to avoid food waste) and for increased recycling is becoming increasingly topical, and this is a phenomenon that affects the plastic packaging chain first and foremost. This is also in light of considerations around product and container life cycle, which show that the environmental impact of food is on average four times greater than that of its packaging²¹.

One further element to consider is the negative approach that public opinion is showing towards plastic packaging applications. This phenomenon, which is also linked to European and national regulatory developments, has led to numerous major brands, including multinationals, rethinking the packaging in use. Plastic packaging has in fact shown the least growth since 2020.

EVOLUTION OF THE PACKAGING MIX

With regard to this aspect, special analyses are being carried out to introduce a forecasting factor for the evolution of the packaging mix among the different materials of the packaging put on the market. These analyses are based on surveys commissioned by CONAI to Nielsen and IRI, respectively on the commercial retail and hospitality wholesalers sales channels, and will be supported by targeted interviews with key players in the supply chain, in order to understand and project current developments.

The surveys available so far show a contraction of products sold in plastic packaging on the consumer goods market, particularly with regard to the beverages segment, both with respect to 2020 and to 2019, and with particular regard to carbonated drinks, a segment that is suffering from dissatisfaction on the consumer side and is shifting towards aluminium and glass packs. In particular, there is a more significant, although still marginal, presence of glass bottles also for water in the large-scale retail channel. Similarly, there was a decline in sales of juices in brick packs in 2021 compared with 2020 – a phenomenon that can be attributed to a general contraction in the juice sector, which brings down the figure for drinks cartons placed on the market. Interesting trends in the evolution of the packaging mix were recorded for vegetable preserves and canned vegetables in oil (primarily tuna), where growth in double figures was recorded in sales of glass products (+15%) against poor performance for tinplate packaged products (-7%). Finally, again with regard to the mix of packaging

²⁰ Source: Reduce food waste to nourish the world, FAO.

²¹ Source: Il packaging allunga la vita (Packaging Extends Life), Istituto Italiano Imballaggio (Italian Packaging Institute)

materials, Nielsen's findings give us a segment experiencing significant growth, dominated almost primarily by glass packs.

With respect to the beverage wholesalers sector, the findings from IRI present us with a sector with sales that are still far from pre-pandemic levels but which stands out for trends that are now evident. In the beer segment in particular, there has been a major setback for kegs, which are being taken over by solutions in glass bottles and cans, which can be more easily relocated to other distribution and consumer circuits. A similar fate for carbonated beverages, which recorded declining sales in kegs, while glass bottles kept a hold the most. In wholesalers' sales in the water segment, although plastic bottles account for over 70% of the market, there are contractions and first signs of entry of new packaging solutions in this channel: brick cartons and cans.

Packaging placed on the market is shown by material below.

The steel supply chain, with 542 kilotonnes of packaging placed on the market in 2021, recorded a particularly significant increase (+13.5%).

The main types of steel packaging are: open top; general line; closures; aerosol cans; strapping and wire for packaging and transport; drums and tanks.

As a result of the analyses carried out, the application of the fee to “black annealed wire” was defined from 2021, which resulted in an quantity of approximately 24 additional kilotonnes, more than 4% of the total quantities placed on the market. Net of these quantities, the 2021 increase would be 8.5%.

Within European steel production for packaging, the food sector is the main use, while in the industrial sector, drums are the dominant segment, followed by general line and strapping.

The trend in packaging placed on the market by type shows increases for almost all types: the greatest are seen in the categories of drums and tanks (+10%), general line (+17%), and open top (+8%).

The aluminium supply chain, with 74 kilotonnes of packaging placed on the market, recorded an increase (+11%) compared with 2020.

Beverage cans, canisters, tubs and trays, tubes, capsules and flexible packaging, including aluminium-based poly laminates account for the main types of aluminium packaging. 90% of the use of aluminium packaging comes from food consumption and about 70% is for household consumption, with the remaining 30% destined for the Ho.Re.Ca. (Hotel, Restaurant and

Catering) channel. Imports of beverage cans in particular contributed most to the growth of the consumer market in 2021.

The paper supply chain, with 5,243 kilotonnes of packaging placed on the market, recorded an increase of 11.1% compared with 2020, in line with European and Italian data from the sector. The amount of packaging placed on the market in 2021 increased again significantly after a decline in 2020, and exceeded 5 million tonnes for the first time, an increase of 11% compared to the previous year, the highest value recorded in the last 20 years. The economic recovery (GDP +6.6%), but also new habits of consumption linked to e-commerce and the continuation of a trend of substitution with plastic packaging are all variables that have contributed to such significant growth.

On a national level, the Assocarta centre for study notes that paper and cardboard production is up by 12.5% compared to 2020:

- +21.4% for graphic paper;
- -3.6% for toilet, household and sanitary papers;
- +14.7% in the production of paper and cardboard for packaging;

Remember that the main types of paper and cardboard packaging are corrugated cardboard, pots and tubes, envelopes, wrapping papers, stiff board, shoppers and bags, sacks, labels and paper-based poly laminates. With reference to composite packaging suitable for containing liquid foodstuffs (for example, within this category are beverage cartons – for milk, fruit juice, etc. – and the same types of packs for other food products – sauces, tomato purée, etc.); that placed on the market is approximately 78.6 kilotonnes.

The wood supply chain, with 3,394 kilotonnes placed on the market, recorded an increase of 11.2%.

The release of wood packaging onto the national market rose sharply, mainly due to domestic production.

The main types of wooden packaging are in fact pallets, industrial packaging (crates, cages, reels) and fruit and vegetable packaging. In 2021, almost 50% of placement on the market is estimated to relate to new pallets, 28% to the placement on the market of repaired pallets and 14% to industrial packaging, with a further 5% or so to fruit and vegetable packaging.

The plastic supply chain, with 2,274 kilotonnes placed on the market, recorded an increase of 3% in 2021.

There are many types of plastic packaging: flexible packaging (stretch film wrapping, plastic-based poly laminates, shoppers, etc.), stiff packaging (bottles, trays, etc.) and other protective and transport packaging (pallets, crates, boxes, etc.) for the Business to Business (B2B) channel. It should be noted that regeneration and re-placement on the market circuits also exist for this supply chain, as in the case of multi-material drums and tanks. The rental and reuse circuits also play an important role, again linked to the B2B sector. Overall, 56% of plastic packaging put on the market is rigid packaging²². In terms of polymers, polyethylene is the most widely used, aimed mainly at flexible packaging, where it exceeds 70%. PET and PP are also consumed in considerable amounts, which conversely are used mainly for rigid packaging.

The assessments provided in the official documents received by CONAI from COREPLA (1,862 kilotonnes of packaging in the various types), CONIP (87 kilotonnes for crates and 6.6 kilotonnes for pallets), CORIPET (192 kilotonnes of PET bottles) and P.A.R.I. (14.5 tonnes of PE film) and an estimate of quantities that may be related to plastic packaging, but for which analyses are ongoing for about 38 kilotonnes, contribute to the overall figure of the packaging material placed on the market.

MAIN DATA ON PLASTIC BAGS

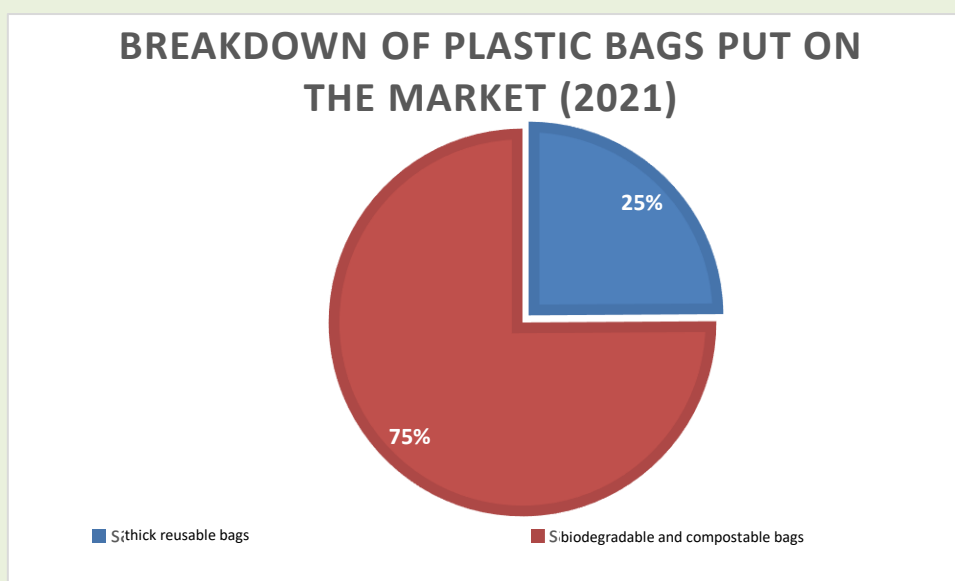
Pursuant to Article 220-bis paragraph 1 of Legislative Decree 152/2006 – Obligation to report on the use of plastic bags

Given the legislator's focus on the topic of plastic bags, we include in this box the available data collected from over 500 companies. In the streams declared, CONAI highlighted the shares of single-use (68.5 kilotonnes) and reusable (11.2 kilotonnes) shoppers, excluding cabas (which are exempt from payment of the CONAI environmental contribution precisely to promote them in view of their reusability). At the same time, it was deemed appropriate to confirm specific sector studies commissioned to third parties with recognised professionalism in the field (Nielsen), in order to arrive at an assessment of the plastic bags marketed²³. It is important, however, to consider that even in 2021 there were situations that did not entirely comply with the regulations, which are unlikely to be included in official statistics. One should then add quantities of non-standard bags to the official recorded quantities, which are

²²COREPLA Management Report, analyses on Plastic Consult data.

²³As far as “cabas” plastic bags are concerned, the results of the study by AC Nielsen can be found in the box in section 3.2.

nevertheless still widespread throughout Italy, in particular at retail outlets, local markets and through travelling salespeople.



Source: CONAI and CONAI analyses on Nielsen data

The biodegradable and compostable plastic supply chain, with 74 kilotonnes of packaging placed on the market in the first (full) year of activity, confirms the evaluations performed in the past year. The main types of packaging (compliant with UNI EN 13432:2002) are: freight transport bags and hygiene/bulk food bags (accounting for more than 90% of overall quantities) and disposable tableware (plates and cups).

FINAL 2021	PUT ON THE MARKET Ktonnes
TOTAL PLASTIC	2,200*
Responsibility of COREPLA	1,862
Responsibility of PARI	14
Responsibility of CONIP	94
Responsibility of CORIPET	192
TOTAL BIOPLASTIC	74
Responsibility of Biorepack	74
TOTAL PLASTICS AND BIOPLASTICS	2,274

* of which 38 kilotonnes attributable to the free riders corrective measure

The glass supply chain, with 2,850 kilotonnes of packaging placed on the market in 2021, recorded an increase of 4.6%. The types of glass packaging are bottles, phials, vials, vases etc. Glass packaging put on the market also includes a portion intended for reuse following reprocessing of empty containers. The positive trend in the placement of glass packaging on the market should be read in the face of the trends recorded by the main user sectors (primarily beer, and wine), also thanks to the hot summer months, and a progressive increase in consumer acceptance thanks also to the world of e-commerce.

3.1.2 Prevention, reuse, recycling and recovery results

The following section shows the 2021 results in relation to the targets set by current legislation. As mentioned in the introduction, some qualitative and quantitative results are proposed for each target, derived from the information available. On this point in particular, it should be noted that it is not always possible and/or representative of how the entire packaging chain is evolving to report quantitative data on the measures taken as a result. Data that derive from CONAI's actual possibilities for action, which acts within a perimeter of possibilities established by law, in a situation of not having full access to the information of interest (e.g. independent recycling data) and in a complex and articulated context, where cause-effect relationships are determined by the economic and social context and numerous external factors. Not to mention that, to be able to report on the results of measures involving numerous stakeholders and with different, non-binding procedures, it is necessary for the effects of the proposed measures to reach maturity and dissemination, so the time frame is almost never short-term. When we talk about results in the field of prevention, we are talking about actions that, once defined, often require considerable economic investment for companies (e.g. in the case of replacing machinery), but also a specific commitment to promoting changes and innovations at all levels (e.g. by involving suppliers and/or customers), and which therefore require an average time frame of around two to three years to be carried out.

In its role as guarantor for the achievement of recycling and recovery targets, CONAI has always initiated and promoted standardised reporting and a monitoring and control system for data on the placement on the market, recycling and recovery of packaging waste oriented towards continuous improvement, the issue of reporting and measuring results also in the field of prevention (prevention of waste formation, reuse and recyclability) is certainly more delicate. And it is precisely on these aspects that the above reflections must be given more consideration

with regard to time frames and direct and indirect effects, which are highly dependent on the context.

Critical issues in terms of the reporting of results have also been noted for years, starting with the impossibility of having timely access to information on independent recycling as well as energy recovery; difficulties that have so far been mitigated by developing statistical methodologies and entering into agreements in exchange of payment with the organizations holding this information. Again, on the subject of reuse, it has been emphasised for years that the phenomenon is not duly traceable, in light of the fact that some detailed information such as the number of rotations is a fundamental part of the business of companies and consortia that manage it directly and is therefore unlikely to be provided voluntarily. CONAI also promoted survey actions and methodologies on this point, but without claiming to have mapped the phenomenon entirely.

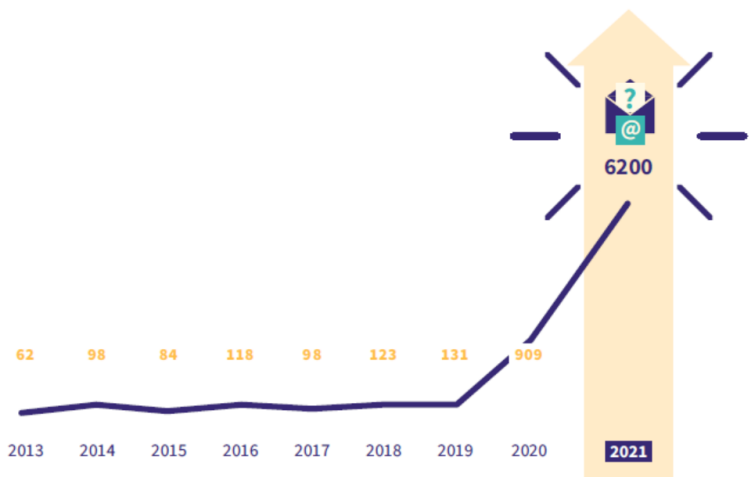
The results for each measure for 2021 are illustrated below. These data stem from the analysis of the reports of the packaging material consortia and recognised self-compliance EPR organizations received by CONAI, as well as from the analysis and research activities directly carried out by the Consortium. To close, the reporting and validation activities of the information provided to the institutions that the Consortium has promoted in the last few years are presented.

With regard to prevention objectives, the results of across-the-board activities related to E PACK and the *Bando CONAI per l'eco-design* are initially presented, which, as mentioned above, provide useful elements for the achievement of several objectives.

E PACK

There were a total of **6,200** requests in 2021. In the last two years, and in particular in 2021, the significant increase, compared to previous years, in requests handled via epack, is due to the numerous queries on the **mandatory environmental labelling of packaging** under Decree no. 116 of 26 September 2020.

EVOLUTION OF E PACK REQUESTS



SOURCE Prepared by CONAI

BANDO CONAI PER L'ECO-DESIGN

The *Bando CONAI per l'eco-design* is important for monitoring how companies are promoting the eco-design of packaging, identifying best practices, and it is also sponsored by the MiTE.

The *Bando CONAI per l'eco-design* saw a continual increase in the number of cases of virtuous packaging (hereinafter referred to as cases) submitted during the eight editions from 2014 to 2021 (see graph below). The increase in requests to participate in the *Call* and the growing interest from companies boosted the growth of the initiative, also in terms of the total prize money for the winning companies. In fact, the prize money increased from 200,000 euros in the first edition to 500,000 euros in the latest.

Virtuous cases are honoured both economically and through communication initiatives via various media and social media channels.

In 2021, 185 projects were incentivised (+16% compared to 2020) presented by 109 companies.



BANDO CONAI PER L'ECO-DESIGN

Designed to reward the most sustainable packaging solutions.



ecoPACK 2021
BANDO CONAI PER L'ECODESIGN



2021 edition

- 326 cases presented +13%

- 109 prize-winning companies

- 185 projects incentivised +16%
over 2020

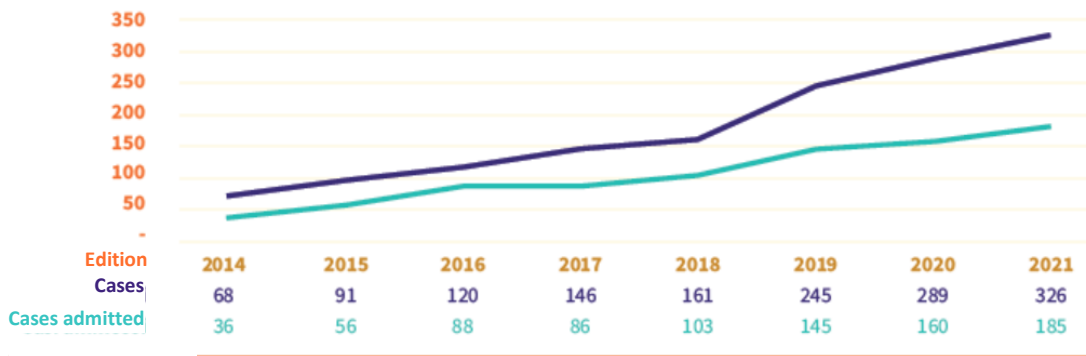
- Use of recycled materials has doubled

- Raw material savings have dropped

- Cases of reuse have tripled

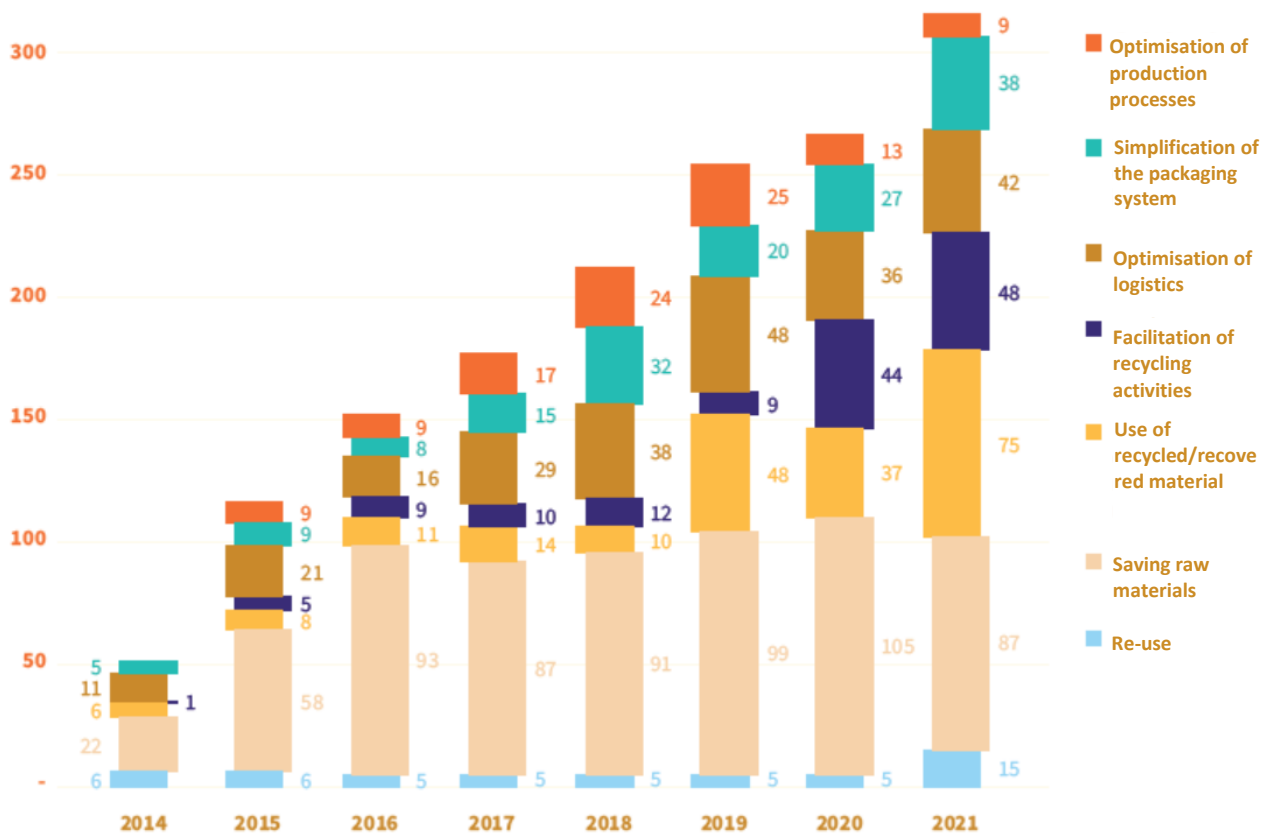
- ★ Legambiente awarded a special mention to one of the five circular innovation winners

CASES SUBMITTED AND ADMITTED ONTO THE VARIOUS EDITIONS OF THE CALL



SOURCE CONAI analyses

PREVENTION IS LEVERAGED THROUGH THE VARIOUS EDITIONS OF THE CALL



SOURCE CONAI analyses

As can be seen from the graph above and moreover, as already noted last year, the interventions that companies have put into place to reduce the environmental impact of packaging have changed over the years. The 2021 Call revealed three relevant aspects:

- For the first time, there was a reversal in the trend of leveraging *Raw material savings*. The most historically active driver, which still is, recorded a decline from 2020. The reason for this may be attributed to the fact that packaging has now reached a level of performance in relation to weight that tends to the asymptote, and further significant reductions would risk undermining the fundamental function of packaging, namely that of protecting the contents;
- For the first time, there was a substantial increase in the number of reusable packaging cases (from 5 to 15), so it could be said that there has been increased focus from companies on designing packaging that can withstand more than 1 use. These interventions are linked to the principles of the circular economy and efficient use of resources, as they allow the useful life of packaging to be extended by further shifting the disposal to separate collection for subsequent recycling;

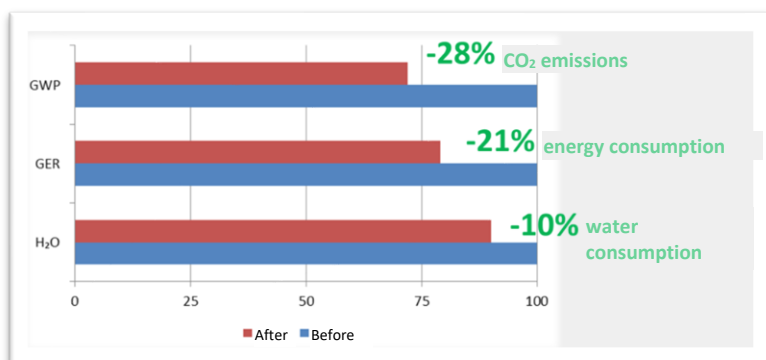
- Finally, there was a significant increase in interventions related to the use of recycled material, which is also a circular driver meaning the use of material from recycled waste (or second raw material) in a new production process.

Companies wishing to participate in the *Bando CONAI per l'eco-design* must verify the environmentally friendliness of their actions through the **CONAI Eco Tool** – www.ecotoolconai.org – Call Area, the tool that enables a simplified LCA analysis to be carried out and the effects of preventive measures taken on packaging to be measured, in terms of three environmental indicators such as the reduction of CO₂ emissions, reduction of energy consumption and reduction of water consumption, plus an indicator of second raw material generated, which enhances cases of packaging design for recycling.

Last year, the Eco Tool underwent functional improvements and the customary updates.

On average, the 185 cases admitted led to a reduction of 10% in water consumption, 21% in electricity consumption and 28% in carbon dioxide emissions.

Bando CONAI per l'eco-design 2021: the average benefits of environmental indicators



Source: CONAI analyses

It should also be noted that the CONAI Eco Tool operating procedure and the evaluation criteria for the *Call* cases were validated by a third-party certification body as shown by the declaration of verification in the appendix.

Thanks to the collection of promoted cases carried out in recent years, it has therefore been possible to record numerous accounts of the experience of manufacturers and users who have chosen to evolve and modernise their packaging, often providing an incentive for innovation to each other. The tracked cases refer to the positive results of the design and research and development activities of manufacturers and users that have reached the market and which the consumer often has no evidence of.

It is possible to deduce from the analysis of the mapped interventions how the greatest focus is placed precisely on the upstream stages; for example, in the choice of using recycled material and/or reducing thickness and weight, although over time a progressive decrease is nevertheless recorded in cases involving minimal use of raw materials for the production of packaging – a sign of a likely functional and technological limit on this front to which packaging design is close.

Next, among the most frequent actions are those related to the design and production stages, which in particular include the simplification of the packaging system and the optimisation of production processes, through the reduction of wastage or the reduction of production inputs (water, energy), often linked to the modernisation of machinery and the rethinking of packaging designs. As can be seen from the graph below, these interventions very often go hand in hand with logistical and distribution optimisations, made possible by the introduction of more easily stackable designs and shapes or the rethinking of the entire packaging system (primary, secondary and tertiary).

Some examples of cases of packaging that were awarded prizes through the Bando CONAI per l'eco-design 2021 are detailed in the appendix. Although these packaging cases are mere examples that are not representative of the market, it is nevertheless important to consider that many of the incentivised cases are presented by leading companies in the relevant sectors, which often drive innovations and are promoters of interventions that the market concerned will very often tend to replicate later.

THE POTENTIAL OF PREVENTION (extract *Green Economy Report 2020*)

From the now extensive database of the CONAI Eco Tool, data and information collected from the latest editions of the “*Bando CONAI per l'eco-design*” have been extracted and processed in order to estimate the potential environmental benefits related to the dissemination of best practices implemented by packaging producers and users in Italy.

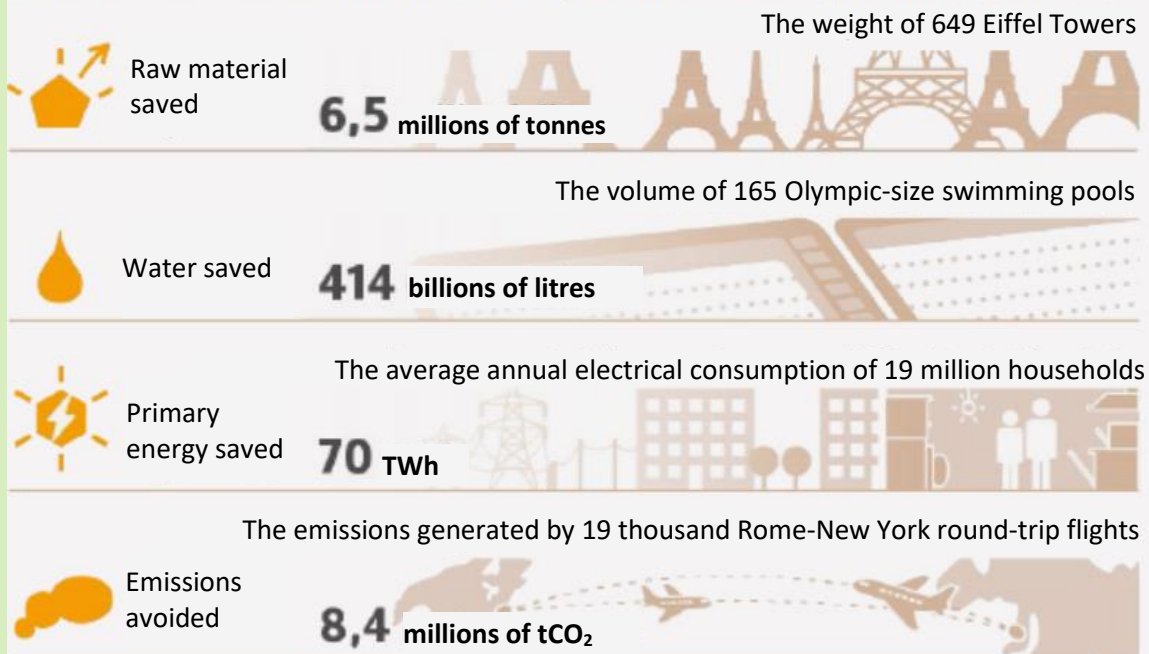
The analysis was based on a sample of over 240 cases, representative of a “typical basket” of products usually found in the shopping carts of Italians, including primary and secondary/tertiary packaging, on which about 270 eco-design interventions were carried out. Most of the time, prevention measures concerned primary packaging, such as bottles,

detergent bottles, biscuit bags and cosmetic cases, but also caps and closures and labels; in other cases, eco-design measures concerned the entire packaging system, for example by working on optimising logistics, with repercussions also on the savings of materials used for the production of secondary and tertiary packaging used to transport and handle goods (e.g. pallets, boxes, displays and palletisation film).

As a basic hypothesis of the analysis, it was assumed that all the packaging of products belonging to the typical 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 “Bando CONAI per l’eco-design”. To this end, for each type of packaging considered in the basket, the average environmental benefits generated through application of eco-design drivers were calculated. These improvements were then multiplied by the number of items sold, based on the analysis of the packaging put on the market by material and by product category for the year 2019.

PREVENTION HAS IMPORTANT POTENTIAL IN TERMS OF THE ENVIRONMENTAL BENEFITS IT CAN GENERATE

Environmental benefits of prevention activities estimated by the analysis



Source: Conai and the Foundation for Sustainable Development analysis on data from the Call, Italian Packaging Institute and LCC Tool

PREVENTION OF THE FORMATION OF WASTE:

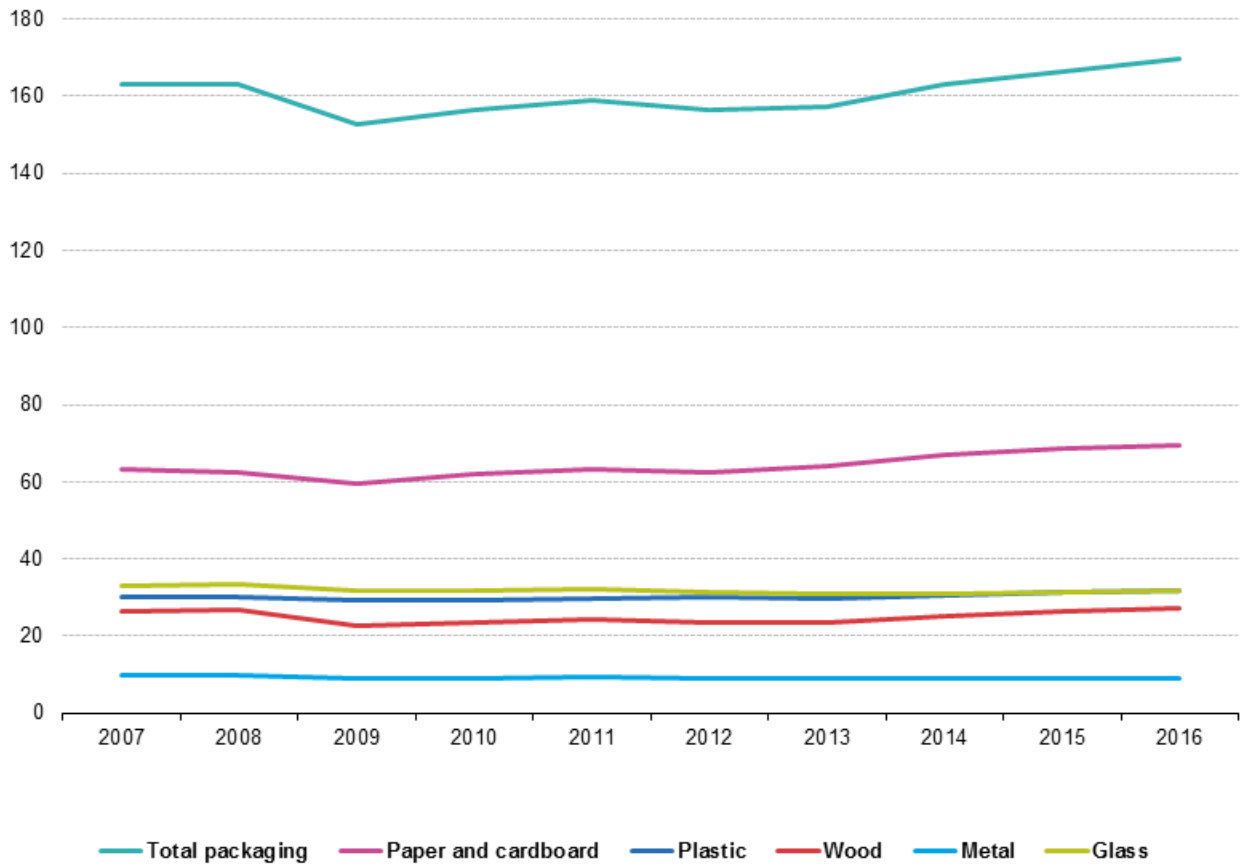
Given the technical function of packaging, i.e. the protection and preservation of the content/product, the tendency to consider that which is not part of the structural functions to be superfluous and useless means that the other equally important functions of packaging such as those related to recognition of the product, which is fundamental for the choice of the product itself, are not acknowledged. If the prevention of the generation of packaging waste is to be interpreted as a purely quantitative reduction at source, paradoxically, one could argue that the elimination of packaging could result in the elimination of the product itself.

It is therefore necessary to decide whether to act to limit to what is “necessary” or to do more, in terms of service and functionality, with less (e.g. single-portion packaging to adapt to households that have changed significantly from in the past). CONAI works in the latter direction and promotes an approach to the environmental sustainability of packaging that aims to maintain the availability of goods and services while reducing the impact on the environment.

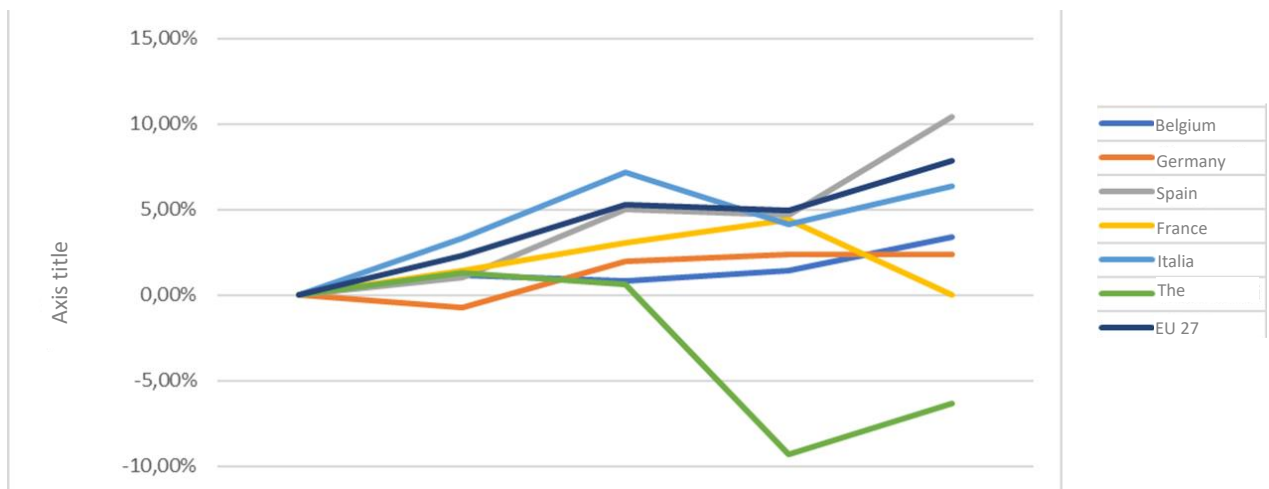
Beyond what is established by current regulations, which do not take into account the complexity of the issue, the issue of the prevention of waste formation and the definition of a possible quantitative indicator requires a series of reflections not only related to the environment but also technical and economic concerns.

Packaging waste generation trends per capita (reference year 2015);

Packaging generated per inhabitant, EU, 2007–2016
(kg per inhabitant)



Note: EU aggregates between 2007 and 2011 are estimates.
Source: Eurostat (online data code: env_waspac)



Source: CONAI analyses on Eurostat data June 2022

All packaging material supply chains have made a huge effort on the efficient use of resources from the outset to achieve a more satisfactory ratio between the weight and surface area/thickness/volume of packaging, while guaranteeing or increasing its technical performance. The results were appreciable thanks also to the technological innovations provided by the industry.

Taking action to reduce the thickness and weight of packaging means working on production technologies, so these improvements undergo the technological advances typical of innovative processes and do not tend to take long to spread, as these are major investments that must then be offset by companies. The prevention of packaging waste, although it represents an optimisation of the use of input resources for packaging production, in some cases guaranteeing financial savings for companies (the lower the weight of the packaging, the lower the costs for the supply of raw materials and the lower the fee due), is also a cost item for initial investment that takes quite a long time to be offset.

The environmental performance of packaging has also increased because of the use of second raw materials, where regulations, performance and availability allow. In this case too, technology has over time also enabled packaging made from recycled material to be lighter than initial practices.

As reported, all supply chains have promoted innovation to increase the environmental performance of packaging, each with their own specific features related to the characteristics of both the material and the sectors in which they are placed – for example, for wooden packaging used mostly in the logistics sector, load-bearing capacity and safety are fundamental requirements that must be guaranteed. For this reason, rather than aiming for weight reduction, efficient use of resources has been achieved by moving towards the regeneration and reuse of packaging.

It should also be noted that on certain types of plastic packaging, the use of recycled material to make the supply chain increasingly circular is the new frontier promoted by the European Union for resource savings upstream. As already reported, Directive 2019/904, better known as the SUP Directive, requires that PET bottles for beverages put on the market from 2025 contain at least 25% recycled material, a percentage that is destined to rise to 30% by 2030.

This indication has already led many brands to commit and choose to convert virgin polymers with recycled ones where it is already feasible from a technological and market point of view.

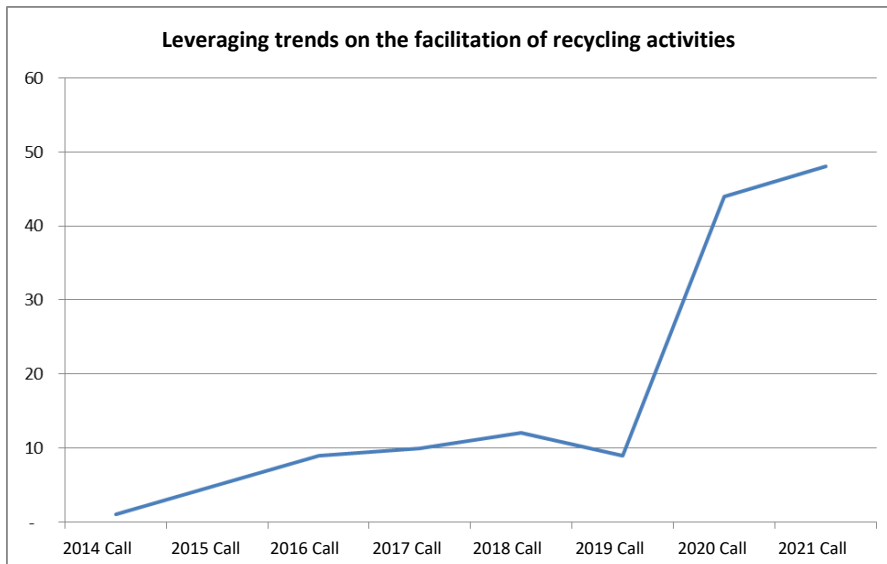
3.1.3 Increase in the quantity of recyclable packaging

Compared to the target of increasing the amount of recyclable packaging waste compared to non-recyclable packaging waste, the percentage of recycling of packaging placed on the market (see section on recycling and recovery results) is already an indicator of larger amounts of packaging waste recycled, also due to the increased amounts delivered to separate collection. Some technical aspects relating to the recyclability of packaging should also be noted, especially in some specific sectors. In the food sector, for example, the preservation and protection of certain products requires packaging to be designed that can be complex to manage at the end of its life. In recent years in particular, increased awareness of reducing food waste has required packaging with increasingly high-performing from the point of view of prolonging the life of the product. Therefore, this aspect has also contributed to packaging that is not easily recyclable being put on the market.

Other aspects that are of particular importance to the recycling chain and the design of easily recyclable packaging relate to the existing plant system and possible applications with the material from recycling. Packaging must be designed taking into account the characteristics of the facilities that will handle the specific material. Technically, all packaging could be recycled, but it is always necessary to consider, on the one hand, that it often comes from collection that is not homogeneous, so technologies and critical mass are needed to achieve homogeneous streams for recycling, and on the other hand, what it may become once transformed into a second raw material in order to avoid unnecessary economic and environmental costs due to the recycling of materials that will then have to be managed with other forms of disposal.

As an indicator for this objective, the trend in the use of the "facilitation of recycling activities" driver in relation to the *Bando CONAI per l'eco-design* initiative is reported, from which it can be seen that the number of cases involving specific interventions oriented towards the growing recyclability of packaging increased significantly in 2020 (44 cases compared to 9 in 2019) and remained steady in 2021 with 48 cases.

It should also be noted that this trend is only related to cases submitted voluntarily by companies and is not intended to be representative.



Source: CONAI

Given that CONAI has chosen to use the contribution as a leverage tool to increase the recyclability of packaging (starting with the plastic packaging material chain and extending the project to paper packaging as well), it is worth making an initial assessment of what fee modulation and the increasing focus on the issue of recyclability has entailed for companies in the 3 years of application, which have clearly changed their approach to the issue, seeing an increasingly effective role played by CONAI, COREPLA and COMIECO in supporting them. For the plastic packaging material chain in particular, the past two years there has been:

- replacement of covering labels (sleeves) with ones with perforations by many home and personal care product companies, accompanying them with instructions for proper waste disposal (separate the label from the bottle before disposing of both into sorted waste), before the legislative requirement for environmental labelling. This method, where the consumer collaborates, overcomes the critical issue on the sorting side related to the superficial reading of the polymer of the label rather than that of the bottle;
- replacement of the carbon black-based dye (not recognisable to optical readers used during sorting) used by the two main brands that use black bottles with new black dye solutions containing organic pigments, specially designed to make bottles sortable;
- replacement of coloured bottles with clear bottles;
- rethinking the structures of flexible packaging by numerous companies, where possible without sacrificing the performance of their packs, by modifying accessory components, i.e. replacing multilayer structures of different polymers with monopolymer ones or with compatible polymers;

- sparking interest and enabling research by companies that see their packaging classified under Level C to verify the creation of possible supply chains, also in partnership with trade associations, including experimental recycling chains, as in the case of PET trays, which have launched an experiment, which is still under way, to verify the technical and economic feasibility of a dedicated recycling circuit.

As regards the paper packaging material chain, there is an increased focus on recyclability through the use of the Aticelca test method.

3.1.4 Reuse

Article 183, paragraph 1, (r) defines reuse as *“any operation by which products or components that are not waste are used again for the same purpose for which they were conceived;”* and Article 218, paragraph 1, (e) of Italian Legislative Decree 152/2006 defines reusable packaging as *“packaging or packaging component that has been conceived, designed and placed on the market to carry out multiple trips and rotations within a reuse circuit during its lifetime for the same purpose for which it was conceived;”*.

From the above definitions, it is clear that primary packaging often does not lend itself to reuse due to its function. For example, consider food trays or wrappers used for gastronomy or sweet wrappers, etc. In addition, the “reuse” eco-design driver could conflict with the “raw material savings” one, as reusable packaging needs to weigh more than single-use packaging to guarantee a minimum number of rotations. This is why precise and specific evaluations are necessary on this specific measure and it is not possible to give an absolute positive or negative judgement.

CONAI reports reuse data annually through the submission of the *Modello Unico di Dichiarazione (MUD)* – Single Declaration Model – submitted on 21 May 2022.

The data reported on the issue of reuse are calculated on the basis of the information available in the CONAI database and the results from mapping carried out as part of the Reuse Observatory, and are supplemented with the assessments commissioned from the Italian Packaging Institute, “Analysis of packaging placed on the market”.

Reporting reuse data is in itself a complex activity, as it is often not tracked by official documentation that makes the assessments verifiable and it is often necessary to make use of estimates and self-declarations by companies and associations.

In order to overcome these difficulties, a specific activity was started involving around 500 companies (e.g. companies in the “mineral water” sector) to obtain evidence of whether they use reusable packaging and, if so, the type of packaging, the number of pieces purchased, the weight per unit, the rotations in a year and the average life.

The analysis showed that the main types of reusable packaging are: steel drums, wooden pallets, plastic crates/baskets/containers and glass bottles.

Below is a table with evidence of what emerged:

TYPE	TOTAL NO.	AVERAGE WEIGHT (KG)	WEIGHT (T)	AVERAGE NO. OF ROTATIONS PER YEAR	AVERAGE LIFETIME (YEARS)
Steel drums	222,000	12	2,701	2	10
Wooden pallets	900,000	14	12,900	6	4
Plastic crates	5,000	1	5	9	5
Plastic containers	42,000	33	1,386	not available	17
Plastic baskets	1,970,000	1	2,463	6	11
Glass bottles	25,500,000	0.45	11,475	6	7
TOTAL	28,639,000		30,930		

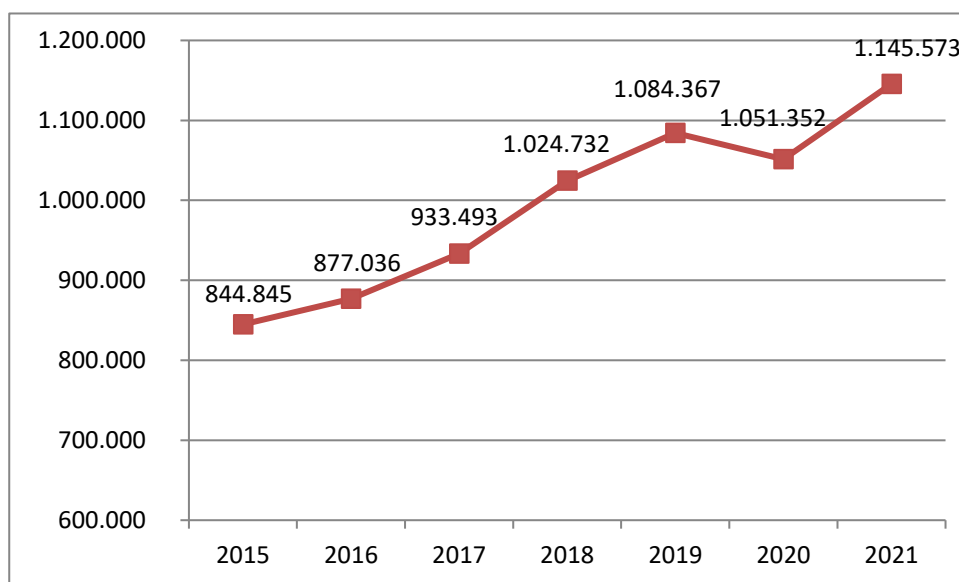
Notwithstanding the undeniable complexity of tracking precise data on reuse, also confirmed by the recent EU discussions for the new system of reporting, it has been emphasised for years, in the methodological note prepared with the MUD submission and sent to the competent Authorities, that what is reported in the Reuse File is the result of an interpretation with regard to specific requests. The data refer to annual trips, understood as the circulating fleet net of breakages and replacements. For years, there has been difficulty in interpreting the required content both in relation to which dimension of reuse to account for (data referring to the replenishment of the pool or the total weight of reused packaging required to package the specific goods or other item) and in terms of what to consider as a reuse stream. With regard to this second point, for example, it should be recalled that the File also includes the quantities of packaging designed to be reused and the reuse of which does not depend on belonging to a specific circuit but results from restoration/repair activities and subsequent placement back on the market (as in the case of pallets, drums and multi-material tanks).

The following table shows the evolution of the quantities of packaging reused by weight in 2021 compared with the final figure for 2020, which shows a continuation of the increase in reused packaging throughout Italy. The figure is based on estimates currently available to CONAI and which will be revised in view of the need to also provide such data in compliance with the new calculation methods introduced by Decision 665/2019. In this regard, initial analyses are in progress and will be submitted to ISPRA to share their process of refinement.

MATERIAL	QUANTITY REUSED (t)		DELTA %
	2020 final	2021 preliminary	
GLASS	186,361	186,361	0.00%
PAPER AND CARDBOARD			
ALUMINIUM	34,475	38,267	11.00%
STEEL	381,261	386,168	1.29%
WOOD	956,699	1,075,266	12.39%
PLASTIC	683,321	657,077	-3.84%
TOTAL	2,242,117	2,343,139	4.51%

Source: CONAI analyses on PSP (Programma Specifico di Prevenzione [Specific Programme on Prevention]) of Packaging material consortia, fee declarations, Reuse Observatory, Polytechnic University of Milan and Italian Packaging Institute

Packaging reused under CONAI incentive procedures (tonnes)



Source: CONAI analyses

After falling in 2020, as a result of contractions in the B2B sector (which typically uses this type of packaging) following on from the economic situation, in 2021 volumes of packaging reused via CONAI incentive procedures began growing again.

CABAS: QUANTITATIVE ANALYSIS

Reusable packaging also includes thick plastic/fabric bags, known as cabas. As mentioned, these bags, although falling entirely under the definition of packaging, were excluded from the application of the fee in order to facilitate their widespread use and promote their reuse. Below is the quantification in terms of number of pieces and relative weight of cabas bags marketed in Italy. These values derive from a specific monitoring that CONAI commissioned The Nielsen Company with, structuring a specific and replicable methodology that can then support assessments of the evolution of the spread of these bags.

The analysis is based on Nielsen Market*Track data, total for Italy, for the hypermarket, supermarket and self-service channel and covers a timescale of 2 years.

Analyses show a strong growth in the use of cabas: +8% in terms of the number of bags sold in one year, totalling 11.5 kilotonnes (+16% in one year in terms of weight). The investigation confirms that supermarkets are the largest distribution channel (70% of the total purchase), followed by the hypermarket channel (20%) and self-service (10%). There is also a strong concentration of sales: the top 5 distribution groups cover almost 70 per cent of sales in terms of number of items.

	NUMBER OF ITEMS SOLD		TOTAL FOR PERIOD	WEIGHT OF CABAS SOLD (KG)		TOTAL FOR PERIOD
	2020	2021		2020	2021	
Hypermarkets	19,276,706	20,572,625	39,849,331	2,114,531	2,265,784	4,380,315
Supermarkets	58,895,140	69,898,041	128,793,181	6,761,892	8,102,222	14,864,114
Self-service	10,271,443	10,777,151	21,048,594	1,127,720	1,189,246	2,316,966
Total for Italy	88,443,289	101,247,817	189,691,106	10,004,143	11,557,252	21,561,395

Source: Nielsen Market*Track

Main data from the Reuse Observatory

Material	Type	Useful life (years)	Rotations (no./year)	Average weight (kg)	Repairs/ Reuses during useful life (no.)	General information on regeneration processes
Steel	Drums (with variable capacity; from 210 to 220 litres)	10	/	16 ²⁴	10	The main stages are: restoration of form of the drum, cleaning, testing for leakage and checking of internal surfaces, and finally, brushing and varnishing

²⁴ See CONAI circular for regenerated steel drums www.CONAI.org under downloads.

Aluminium						the outside. On average, about 37% of washed drums do not pass inspection and have to be rejected.
	Gas canisters for water (the most common are 425 g format)	10	3	/	/	The main stages are: sterilisation of the container after the complete removal of all residual gas replacement/repair of the valves that are damaged, testing to ensure that the cylinder is gas-tight, labelling of the cylinder to show the expiry date of the gas.
Wood	Pallets (generally with dimensions of 800 mm x 1200 mm or 1000 mm x 1200 mm)	/	from 3 to 5	weighing 12 kg or less	2.2 for lightweight pallets	The main stages are: the stripping of broken surfaces or blocks, replacement of defective components with new or undamaged semi-finished products.
				weight between 13 and 23 kg	3.4 for average weight pallets	
				weight up to 23 kg	up to 4.5	
Plastic	Interlayers (the most common are 1000x1200 format)	7	5	1.2	7	The interlayers are washed in industrial washing machines with hot water and usually with the addition of detergents. Around 4% of interlayers are discarded during this process.
	Crates with removable sides (mainly in PP; typical dimensions of 60 cm x 40 cm and varying heights)	from 5 to 20	6 - 7	/	/	Crates that are in direct contact with the foodstuff are washed every time they are reused; those used for fourth range (i.e. packaged) products are washed more sporadically.
Glass	VAR (various formats exist: 1L, 0.75L and 0.5L)	/	3 - 5	Can weigh the same as a disposable glass bottle or more (+28-48%)	from 5 to 40 (depending on the characteristics of the bottle and the willingness of customers to receive bottles with signs of wear)	Bottles are initially decapped . They then undergo several stages of pre-washing in a row with water at 40–50°C. They are then washed in a bottle-washing machine that carries out the washing in several successive stages consisting of caustic baths at 75–80°C designed to remove labels, glue and pollutants that may have contaminated the bottle during vacuum storage (which usually takes place outdoors). Then the

						bottle is rinsed first with peracetic acid and then with mineral water. Finally, it undergoes automatic checks .
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As mentioned above regarding the impossibility of reusing most types of packaging, especially primary, this situation is also reflected in the type of material. There are certain materials that, due to their specific characteristics and applications, are more suitable for reuse than others. Below are some examples of activities promoted directly by the packaging material consortia to develop reuse, taken from their specific programmes on prevention of May 2022.

The RICREA Consortium invests significant resources in the reconditioning and regeneration of used steel packaging. In particular, steel drums and tanks with cages, due to their solidity and strength, can undergo various regeneration processes that allow them to be used again as safe and renewable packaging.

There are over 30 plants in Italy that are duly authorised and equipped to perform these types of operations. The plants are located primarily in the north of Italy, near to areas with the greatest industrial activity.

There were about 35,000 tonnes of packaging in total (drums and tanks) regenerated by these companies in 2021, up by 15% from the previous year.

The following table shows the breakdown of the amounts regenerated by type of material over the last three years.

TABLE 2.10: Packaging regenerated (2019 – 2021)			
STREAM	2019	2020	2021
Cages for Tanks Regenerated	22,693	22,758	26,416
Drums regenerated	8,819	7,920	8,932
Total	31,512	30,678	35,348

Source: RICREA PSP of May 2022

From the data in the table above, it can be seen that the quantities of regenerated tanks have been gradually increasing over the years, probably linked to increasing replacement of this type of packaging with steel or plastic drums. Specifically, cages for tanks are characterised by a steel frame that is particularly suited to the repair and regeneration stages, allowing subsequent

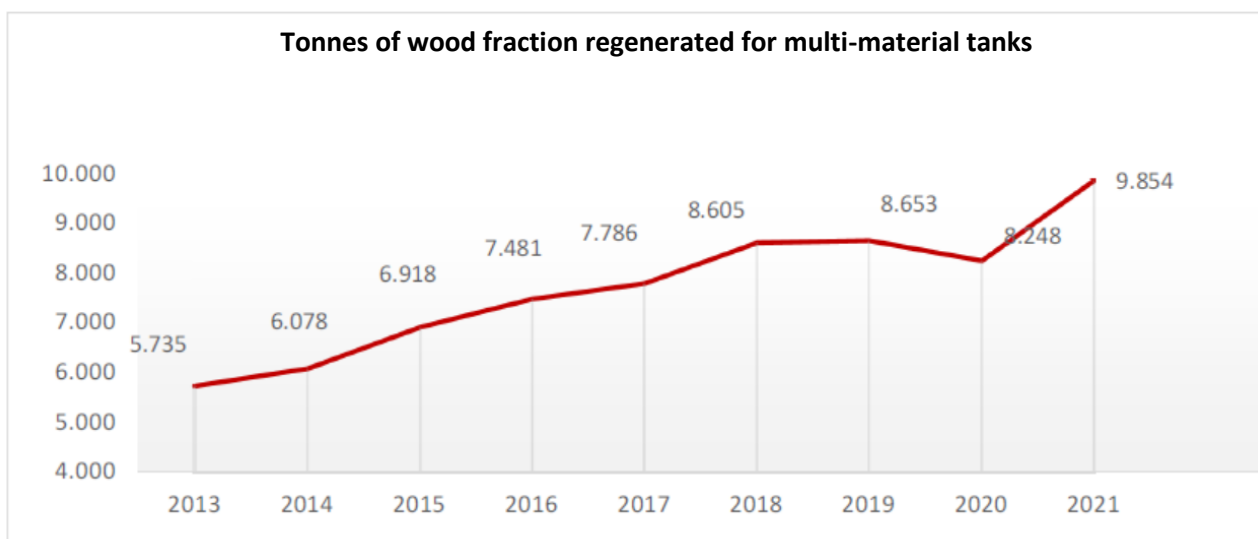
application of a regenerated inner container or a new inner container if it is not possible to regenerate it properly.

The potential of this packaging for regeneration therefore varies mainly according to two factors: the physical state in which it is found at the time of recovery (dents, cuts, rust...) and the type of products it has contained (paints, oils, solvents...).

There is an agreement in place signed between CONAI, RICREA, RILEGNO and COREPLA with the regenerator trade association FIRI, aimed at supporting the activities performed by this segment, paying particular attention and dedicating more resources to the promotion of the sector.

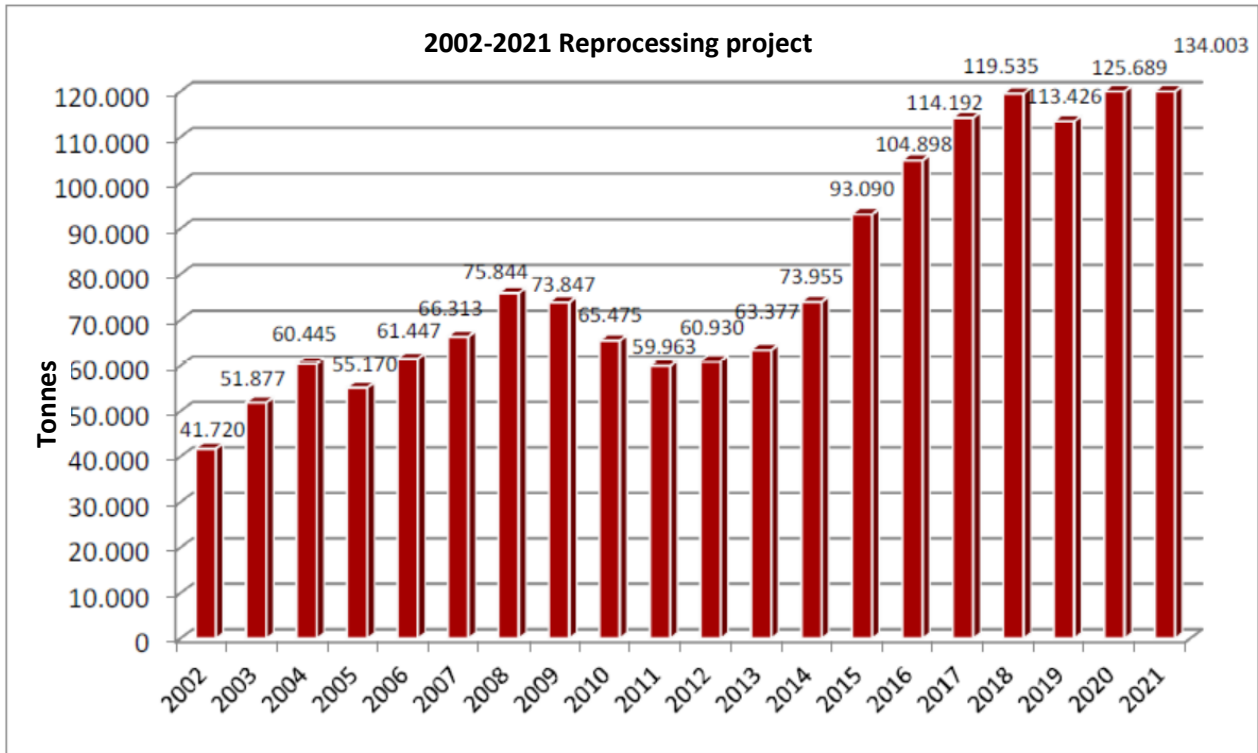
As provided for by the agreement for parties that regenerate wood components of multi-material packaging, there is an obligation to join the consortium; there are 31 parties to the agreement.

The standard total quantity in tonnes for disbursement of the fee, paid to support the activity of regenerators, increased from 8,248 in 2020 to 9,854 in 2021, with an increase of approximately 19.5%. Remember that this figure is quantified on the basis of the procedures defined in the agreement and differs from the figure for packaging placed on the market only in terms of administrative accounting.



Source: RILEGNO PSP – May 2022

With regard to wooden pallets, RILEGNO consortium launched a project in 2002 on “Reprocessing of wooden packaging”, which involves only pallet waste collected by companies participating in the project, by means of disbursement of a fee, and put back on the market after repair.



Source: RILEGNO PSP – May 2022

As part of the Reprocessing project promoted by the Consortium, there was an increase of about 12% in the amount of waste collected in 2020, which resulted in over 6.62% of pallets regenerated, i.e. a total of 134,003 tonnes.

The quantities of packaging waste collected, regenerated and then returned to the usage circuit (net of scrap) are shown below.

REGIONS	Number of parties joining	tonnes regenerated	% tonnes regenerated
BASILICATA	2	14,810.41	11%
CALABRIA	1	436.68	0.33%
CAMPANIA	1	51.04	0.04%
EMILIA ROMAGNA	7	11,119.84	8.30%
FRIULI VENEZIA GIULIA	1	3,041.37	2.27%
LAZIO	1	1,960.61	1.47%
LOMBARDY	24	50,511.15	37.69%
MARCHE	4	4,757.02	3.55%
PIEDMONT	10	22,240.10	16.60%
TUSCANY	3	14,516.62	10.83%
VENETO	9	10,558.86	7.88%
TOTAL	63	134,003	100%

Source: RILEGNO PSP – May 2022

There were additional findings on “vuoto a rendere” (VAR [deposit return scheme]) in relation to glass packaging (bottles).

The “deposit return scheme” (VAR) survey for 2021 confirms a substantial amount of such packages, especially in the hospitality circuit, for the water and beer segments, with volumes recovering compared to the previous year, which had been characterised by the forced closure of public business establishments serving food and drinks, in particular bars and restaurants, for a good part of the year.

For these two market segments, starting from the incidence of “returnable” sales units out of total national sales, once the average number of yearly rotations of “returned” packaging and the expected average useful life of this packaging (in years) had been defined, 226,400 tonnes of reused glass packaging (VAR circuit) was estimated, which, as such, did not become waste to be guaranteed to be recycled through separate collection during 2021.

It should be noted that, in estimating the VAR for the current year, because of the impact of the pandemic on the hospitality circuit, both the number of rotations and the useful life of the circulating pool (reduction of the standard yearly rotations and consequent increase of the years foreseen for scrapping and restoration) adapted to the changed reference context.

The table below shows the available details.

RETAIL SALES THROUGH WHOLESALERS (GfK Eurisko estimate on IRI Infoscan findings) - 2021			
VAR EVALUATION			
Market segment	TOTAL (t)	VAR (t)	VAP (vuoto a perdere [non-deposit/use and discard]) (t)
Mineral Water	210,880		9,746
of which VAR	93.9%	198,565	-
Beer	145,373		93,778
of which VAR	26.3%	38,233	-
TOTAL SALES (Water and Beer) VIA WHOLESALE CHANNELS	356,253	236,797	103,524
CIRCULATING VAR POOL (Mineral Water: 4 rotations/year: Beer: 6 rotations/year)		56,013	-
REPLACEMENT OF CIRCULATING VAR POOL (Mineral Water: 6 years: Beer: 3 years)		10,398	-
VAR BOTTLES (WHOLESALERS)		226,400	
VAR BOTTLES + REPLACEMENT BREAKAGE (WHOLESALERS)			129,854

Source: COREVE PSP – May 2022

3.1.5 Recycling and recovery results

This section describes the results of the recycling of packaging waste in 2021 compared to 2020, by individual chain and in total, based on the information in the Management Report sent to CONAI by the packaging material consortia and the self-compliance EPR organizations.

METHODOLOGY AND DATA ANALYSIS

Reuse of packaging waste by recycling is intended to be understood as recycling material recovery (chemical, mechanical, organic) and regeneration or repair operations (preparation for reuse) where packaging becomes waste and only after restoration/repair operations can it once again fulfil the function it was designed for.

Before reviewing the results, it is useful to recall that overall recycling is determined by the coexistence of two streams, which can be classified by the origin of packaging for recycling from public and private premises.

Public premises refers to the quantities of packaging waste sent to recycling from municipal and assimilated waste, i.e. from separate collection organised by the municipal authorities. Private premises refers to the quantities of packaging waste sent to recycling from the industrial and commercial circuit, so mainly secondary and tertiary packaging waste.

The reclassification between the two streams is directly impacted by the issue of assimilation of special waste to municipal waste, which is characterised by very different situations at local

level. This phenomenon mainly affects the cellulose-based packaging material chain, although not exclusively.

According to the latest available ISPRA data²⁵, the per capita production of municipal solid waste varies in Italy from 368 (Molise data) to 640 (Emilia-Romagna data) kg per inhabitant per year. These differences cannot only be explained by actual per capita consumption but demonstrate the existence of a very diverse range of municipal waste collections throughout the country.

In addition, new online purchasing trends also lead to increasing amounts of packaging – typically secondary and tertiary – becoming household waste, and this is again a phenomenon that mainly impacts the cellulose-based packaging chain. Similarly, during 2021, there was a steady increase in non-household packaging (known as tracer) delivered to both the dedicated and the other streams for the collection of plastic packaging waste. This is an indication of increasingly broad municipal collection perimeters in some areas.

The data are also presented with reference to the distinction between the systems that manage recycling: recycling directly managed by the packaging material consortia, recycling managed on the market by independent operators and recycling managed by the self-compliance EPR organizations.

This aspect deserves an introduction. Hereinafter in the document, the different forms of management will be highlighted and commented on separately, with the contribution of the individual management models adopted, and the contributions of the various EPR schemes for the plastic packaging material chain, specified and shown in the graphs.

Managed recycling is represented by packaging waste that has been taken on by the packaging material consortia and sent for reuse. Typically, these streams come from separate collection managed within the ANCI-CONAI agreements signed with municipalities/local waste management agents. Then there are also the quantities relating to the reuse of packaging waste on private premises, thus typically relating to commercial and industrial waste. These streams are created from specific agreements/conventions entered into by the packaging material consortia with operators in the sector, especially for wood.

The recycling data managed by the consortia are documented and verifiable by means of FIR (waste forms) or DDT (transport documents). It is also worth mentioning that consortium

²⁵ Municipal Waste Report 2021 edition

management has over the years been a driving force for the recycling of similar fractions, especially for some supply chains, i.e. (non-packaging) goods in standard materials (e.g. paper and wood), and this will also be discussed below.

Recycling managed by the packaging material consortia, involves:

- recycling from the market, i.e. packaging waste that is sent for reuse by independent operators that operate for profit; typically these therefore consist of commercial and industrial packaging streams that are reused on the market by recycling and a portion of packaging waste present in municipal waste, where the municipal authority/service manager has chosen not to adhere to the ANCI-CONAI Framework Agreement or to withdraw from it,
- recycling by self-compliance EPR organizations, i.e. the portion of packaging waste managed by PARI and CONIP for commercial and industrial streams and by CORIPET for the portion of packaging waste present in municipal waste that it is responsible for (from 2019).

Moving on to the specific data, the following tables show a comparison of the 2021 and 2020 recycling results as a percentage and in absolute values, and demonstrate the improvement in the results achieved above the current minimum targets and ever closer to the new recycling targets required for the Circular Economy.

As the figures in the tables show, the measures put in place to facilitate the recycling of packaging waste and its recyclability have resulted in an increase in the overall recycling rate: from 72.8% to 73.3%, continuing the positive growth trend since the launch of the system. In absolute values, there was a significant increase in the quantities of packaging waste recycled, which went up to over 10.5 million tonnes (+9.3%).

Percentage of recycling of packaging put on the market

	2020	2021	Delta
MATERIAL	%	%	P %
STEEL	77.7%	71.9%	-5.8%
ALUMINIUM	67.3%	67.5%	0.1%
PAPER	86.1%	85.1%	-1.1%
WOOD	62.0%	64.7%	2.8%
PLASTICS AND BIOPLASTICS	51.2%	55.6%	4.4%
GLASS	78.6%	76.6%	-2.0%
TOTAL	72.8%	73.3%	0.5%

Source: CONAI-Packaging material consortia

Recycled packaging waste quantities

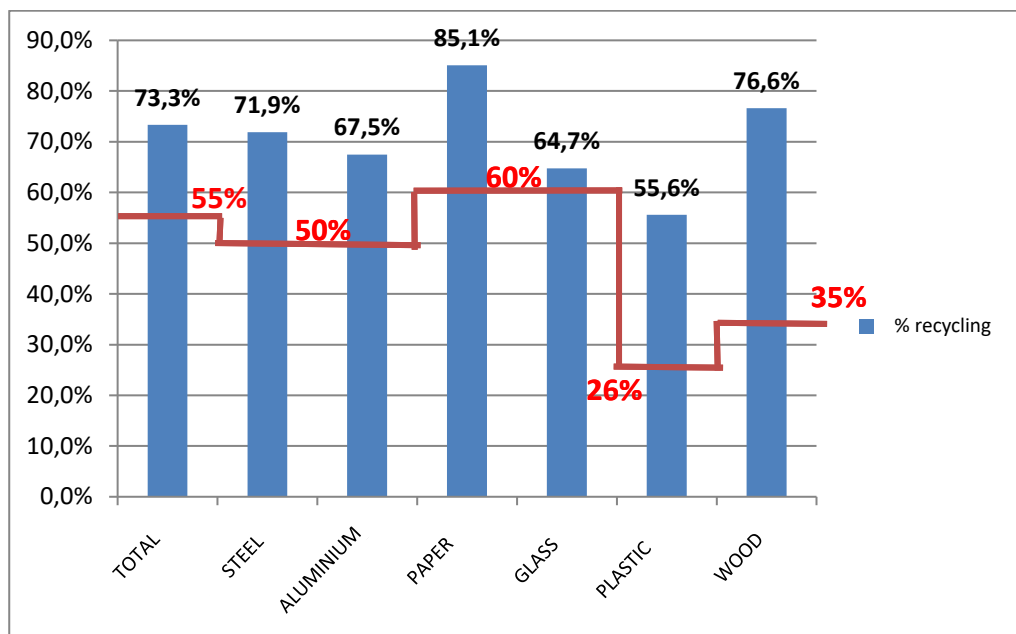
	2020	2021	Annual variations
MATERIAL	ktonnes	ktonnes	%
STEEL	371	390	5.1%
ALUMINIUM	47	53	11.6%
PAPER	4,067	4,460	9.7%
WOOD	1,892	2,198	16.2%
PLASTICS AND BIOPLASTICS	1,131	1,264	11.8%
GLASS	2,143	2,183	1.8%
TOTAL	9,651	10,548	9.3%

Source: CONAI-Packaging material consortia

MANAGED RECYCLING - PARTIES INVOLVED								
		PLASTIC					BIODEGRADABLE AND COMPOSTABLE PLASTIC	
		COREPLA	PARI	CONIP	CORIPET	INDEPENDENT OPERATORS	BIOREPACK	TOTAL
RECYCLING	2020	655,393	8,505	65,585	114,641	286,500		1,130,624
	2021	722,218	14,479	66,872	123,359	299,000	38,400	1,264,328
	Variation %	10%	70%	2%	8%	4%		12%

			2020	2021	DELTA
COREPLA	Mechanical recycling	PET	174,896	159,545	-8.8%
		HDPE	74,517	73,863	-0.9%
		FILM	133,770	141,932	6.1%
		FILS	17,871	13,893	-22.3%
		IPP	47,144	51,930	10.2%
		Mixed packaging	160,644	221,919	38.1%
		EPS	8,636	10,323	19.5%
		total	617,478	673,405	9.1%
	SRA	16,273	20,594	26.6%	
	Chemical recycling	-	939		
	Regeneration and recycling (PIFU)	21,642	27,280	26.1%	
	TOTAL	655,393	722,218	10.2%	
CORIPET	Mechanical recycling	PET - from SC	113,566	121,250	6.8%
		PET - from special waste	1,075	2,109	96.2%
		TOTAL	114,641	123,359	7.6%
PARI	Mechanical recycling	PE FILM	8,505	14,479	70.2%
		TOTAL	8,505	14,479	70.2%
CONIP	Mechanical recycling	Crates	62,927	64,628	2.7%
		Pallets	2,658	2,244	-15.6%
		TOTAL	65,585	66,872	2.0%
TOTAL TRADITIONAL PLASTIC			844,124	926,928	9.8%
BIOREPAC	Organic recycling	Biodegradable and compostable plastic	-	38,400	
		TOTAL BIOCUMPOSTABLE	-	38,400	
TOTAL EPR RECYCLING for plastic			844,124	965,328	14.4%

Comparison of targets achieved with 2008 targets



Source: CONAI–Packaging material consortia

INITIAL EVALUATION OF RECYCLING RESULTS CALCULATED WITH THE NEW EUROPEAN CALCULATION METHODS IN LIGHT OF THE 2025 AND 2030 TARGETS

As we know, a process of harmonisation of data and the reporting system is in place at European level, which led to the review of Decision 270/2005 and, in April 2022, to the drafting of the European Commission's Guideline to guide the various Member States on the correct procedures for reporting data, with a view to sending the official final data in 2020; the submission is expected by June 2022 and offers the possibility of the parallel reporting of data with the “old” calculation method and the “new” one.

At ISPRA's request, following some preliminary comparisons coordinated by CONAI with the packaging material consortia and the self-compliance EPR organizations, we made some preliminary estimates of the impact of the new data measurement points and the calculation rules provided in the Guideline, for 2020 data.

At this stage, it has essentially been verified that for the vast majority of packaging waste streams for recycling, the calculation methods currently used are already consistent with what is required at EU level.

At the same time, a number of more critical issues were identified, on which discussion panels promoted by CONAI will be organised with the various stakeholders and ISPRA will be kept up to date.

In particular, the issues to be addressed in more detail concern:

- the shift further downstream of the measuring point for the recycling figure for plastic packaging waste, which was previously calculated as specifically sorted materials transferred to recyclers. The new method involves the exclusion of waste from pre-treatment and pre-cleaning activities from the calculation of recycled materials, thus positioning the measuring point within the processes of the individual recycling plants. These are characterised by yields and efficiencies linked to the incoming stream, the technologies in use and the specific operating procedures and, therefore, difficult to reconstruct in retrospect without sharing of estimations and assumptions in advance that will have to be introduced to obtain a realistic "mass balance" figure attributable only to packaging waste.
- The formula envisaged for calculating the recycling of ferrous and non-ferrous metals in the ash from combustion. Compared to the method currently in use, the formula is much more complex and articulated, and more detailed information is needed, again linked to specific features of plants and mixes of input materials. with some difficulty in tracing them back to the stream coming from packaging waste.
- Corrective actions on the calculation of packaging placed on the market. The guideline identifies a number of corrective actions to be introduced to the figure for packaging placed on the market, which are not always applicable to the calculation model adopted by the Consortia and CONAI, which is linked, to a large extent, to the point where the fee is collected, located far upstream of the supply chain. Precisely for this reason, it is already broadly comprehensive with respect to stocks and unsold products – two of the corrective actions that are, for example, provided for at European level. On this point, further analyses are ongoing into the possibility of reasonably estimating the amount of packaging resulting from online sales among private individuals.
- Composite accounting, both those placed on the market and as recycling. To date, we have decided not to foresee any substantial changes to the existing calculation methods relating to the weight of the predominant material, which becomes the reference for reporting for packaging placed on the market and recycling. It has to be said that the stream that relates the most this case study is beverage cartons, which, as they are then handled post-consumer as incoming End of Waste at paper mills (whether from joint or selective streams), would fall under the general rule for the recycling calculation for the

paper packaging waste stream. On this point, however, it will be necessary to verify how to handle other possible cases.

The results of the analyses may in future lead to changes and discontinuities with respect to current reporting.

That having been said, we have recalculated the 2020 data, removing the ash products from combustion stream from recycling as a precaution, and, with the help of Corepla and the self-compliance EPR organizations, proposing an initial estimate of the waste from preliminary recycling activities for plastic packaging. Waste calculated with reference to the commercial specifications of the sorted materials and combined with the mass balance of some recycling plants according to the stream of origin of the waste (municipal vs commercial and industrial)

Compared to the quantities presented above for 2020, the new estimates would lead to an overall reduction of 181 kilotonnes, bringing the recycling rate from 72.8% to 71.4%, a drop of 1.4 percentage points. The reduction relates mainly to the plastic packaging chain which, with the new measuring point, based on the information currently available, we estimate to lose on average about 15% of the quantities previously counted recycled.

Should this assumption be confirmed, the total recycling figure for 2021 would stand at 10.3 million tonnes (rather than over 10.5 million tonnes), with a recycling rate of 72% (rather than 73.3%).

Before analysing the recycling trends for the various supply chains, it is useful to remember that recycling is ensured by a private industrial supply chain, which operates legitimately for profit. This involves, for the CONAI-Packaging material consortia system, on the one hand, supporting a public service (separate waste collection), and on the other hand, being a raw materials supplier for a market. In fact, the market factor has a major impact on recycling, with the prices of virgin and second raw materials leading a recycled material to be more or less profitable compared with the virgin equivalent, but also the acceptance or not of incoming materials for recycling. This is an issue that, in expanding market conditions such as the current ones, becomes a potential driver for the quantities sent to recycling, which, in a context of subsidiarity, tends to be managed more outside the EPR organization. On the contrary, in critical virgin and second raw material market conditions, like those of 2020 with the pandemic, it leads to larger quantities being recycled thanks to the direct contribution of the EPR organization and to seeing the market intervention share shrink.

Moving on to the analysis of the data, in 2021 almost 5.6 million tonnes of packaging waste were sent to recycling from public premises, an increase of 7% compared to the previous year, due particularly to the contribution of the packaging material consortia. Based on the data available, it can be argued that in 2021, more than 62% of packaging that becomes waste within the municipal collection circuit ended up being recycled. Of these, 77% thanks to the ANCI-CONAI Framework Agreement with the EPR organization packaging material consortia and the remaining 23% thanks to self-compliance EPR organizations and market management through what are referred to as independent operators.

This is to highlight, once again, the strong contribution that the CONAI-Packaging material consortia system has been able to make downstream and in support of local management of municipal waste collection, backing the already launched market of second raw materials originating from commercial and industrial packaging waste (recycling from private premises) with a new stream, which is still growing year by year and certainly more complex. Today, in fact, with developing separate collections and the continuous search for new technological solutions to reuse even the most complex fractions of packaging waste present in municipal waste, it could be argued that the recycling rate for packaging waste in municipal waste can make an important contribution to achieving the target set by Directive 98/2008.

Almost 4.8 million tonnes of packaging waste was recycled from private premises (of which 20% from consortium management). This stream, therefore, saw an increase compared to the previous year, aided by the recovery of the industrial sectors, thus leading to a +9.3% increase from 2020.

WASTE IN ITALY AND CONAI

On average, around 180 million tonnes of waste are produced annually in Italy, 84% of which is special waste and 16% municipal and similar waste. Within municipal waste, considering 2021 data, the proportion of packaging waste is about 30%, representing about 8% of the national total annual waste.

Waste in Italy – Average yearly data for recent years



Source: CONAI analysis of the latest ISPRA data

To fully understand the results of the measures identified to promote the development of separate collection for recycling, it is important to reason in terms of the results of the conventions relating to the ANCI-CONAI Framework Agreement.

The expansion of the conventions as of 31 December 2021 shows the achievement of very high standards of coverage, albeit divided among the different industry chains as a result of both the expansion of the relevant separate collections and the decision not to sign the conventions under the Framework Agreement by assigning the material to the market.

Conventions in effect by individual industry chain – 2021 data

Material	Inhabitants covered	% Population covered	Municipalities served	% Municipalities served
Steel	50,300,000	85%	6,033	76%
Aluminium	46,895,852	79%	5,638	71%
Paper	56,200,000	95%	7,026	89%
Wood	41,793,856	71%	4,498	57%
Plastic	58,111,463	98%	7,583	96%
Glass	57,536,000	98%	7,569	96%

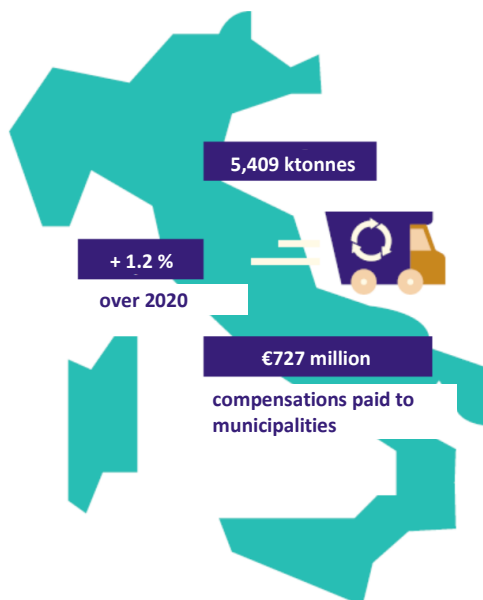
Source: Packaging Material Consortia

From the data available today, because of the conventions, it is estimated that in 2021 Italian municipalities will have delivered more than 5.4 million tonnes of packaging waste to the packaging material consortia, an increase of 1.2% compared to that delivered in 2020.

ANCI-CONAI DELIVERIES

ITALY

ANCI-CONAI DELIVERIES	FINAL 2021		DELTA vs 2020
	Ktonnes	kg/inhabitants	%
Material			
Steel	158	3	-24
Aluminium	18	0.4	-1
Paper	1,566	28	8
Wood	24	1	-82
Plastic	1,476	25	3
Glass	2,134	37	1.4
TOTAL	5,409		+1.2



Packaging waste delivered under convention – Final data for 2021

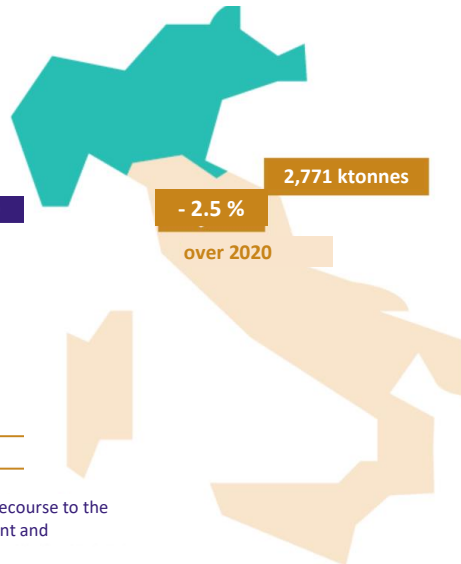
ANCI-CONAI deliveries	Final 2020		Final 2021		Delta
	ktonnes	kg/inhabitants	ktonnes	kg/inhabitants	
Material					%
Steel	209	4	158	3	-24
Aluminium	17.8	0.4	18	0.4	-1
Paper	1,449	25.2	1,566	28	8
Wood	134	3.2	24	1	-82
Plastic	1,433	23.7	1,476	25	3
Glass	2,104	35.3	2,134	37	1.4
Total	5,347		5,409		1.2

Source: Packaging Material Consortia

ANCI-CONAI DELIVERIES

NORTHERN ITALY

ANCI-CONAI DELIVERIES	FINAL 2021	DELTA vs 2020
Material	Ktonnes	%
Steel	76	-33.3
Aluminium	10	-7.4
Paper	779	6.5
Wood	19	-82.3
Plastic	696	0.4
Glass	1,191	3.3
TOTAL	2,771	-2.5

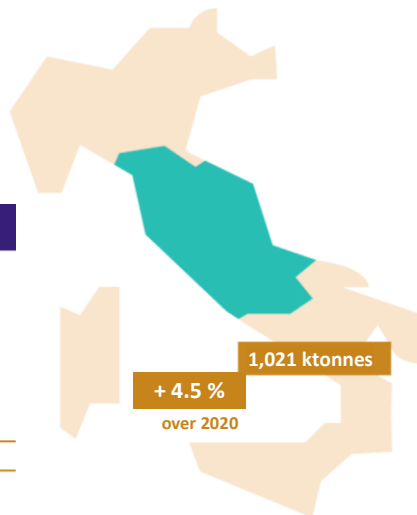


The north has experienced a contraction as a result of greater recourse to the market in an area characterised by more integrated management and

ANCI-CONAI DELIVERIES

CENTRAL ITALY

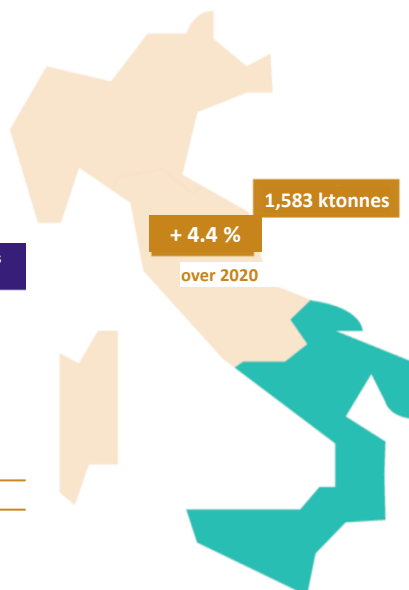
ANCI-CONAI DELIVERIES	FINAL 2021	DELTA vs 2020
Material	Ktonnes	%
Steel	33	-10.8
Aluminium	2	25.0
Paper	323	16.8
Wood	4	-81.1
Plastic	293	6.2
Glass	366	0
TOTAL	1,021	4.5



ANCI-CONAI DELIVERIES

SOUTHERN ITALY

ANCI-CONAI DELIVERIES	FINAL 2021	DELTA vs 2020
Material	Ktonnes	%
Steel	49	-14.0
Aluminium	6	3.7
Paper	463	7.3
Wood	1	-85.0
Plastic	487	5.2
Glass	577	4.7
TOTAL	1,583	4.4



Packaging waste delivered under agreement by macro-area

	North			Centre			South		
	2020	2021	Delta	2020	2021	Delta	2020	2021	Delta
	Ktonnes	Ktonnes	%	Ktonnes	Ktonnes	%	Ktonnes	Ktonnes	%
Steel	114	76	-33.3	37	33	-10.8	57	49	-14.0
Aluminium	10,8	10	-7.4	1.6	2	25.0	5.4	6	3.7
Paper	731	779	6.5	277	323	16.8	432	463	7.3
Wood	107	19	-82.3	19	4	-81.1	8	1	-85.0
Plastic	693	696	0.4	276	293	6.2	463	487	5.2
Glass	1,187	1,191	3.3	366	366	0	551	577	4.7
Total	2,843	2,771	-2.5	977	1,021	4.5	1,516	1,583	4.4

Source: Packaging Material Consortia

The increase in packaging waste delivered to the consortia under conventions was quite small in 2021, as the figure for the total amount delivered is influenced by the drop in the delivery of steel and aluminium to Northern Italy, and especially by the decline in the delivery of wood packaging waste, the 2021 figure for which is limited to January and February only²⁶. With regard to the decrease in steel and aluminium packaging waste in Northern Italy, this is partly due to less delivery to the system as a result of the more favourable rates of scrap iron on the market and partly due to an actual drop in the production of the relevant waste on account of the blockage of production activities and the suspension of the hospitality sector in the first part of the year.

The increase in the total figure for 2021 remains linked to the significant growth in paper and cardboard waste, which in turn is presumably still influenced by the transition of streams from the market to the EPR organization. Plastic and glass also show increases, albeit less significant. The increase for paper is particularly high: deliveries grew by 8% and can be attributed to the crisis that continues to affect the second raw materials market, leading to a steep fall in list prices. In this context, municipalities that were unable to find a recycling destination for the collected materials continued to take advantage of the window for entering into the convention, made available on an exceptional basis by COMIECO to allow all operators in difficulty to be able to deliver the material definitely destined for recycling in municipal collections, with payment of the fee for packaging waste. Further proof of how the CONAI EPR scheme and the

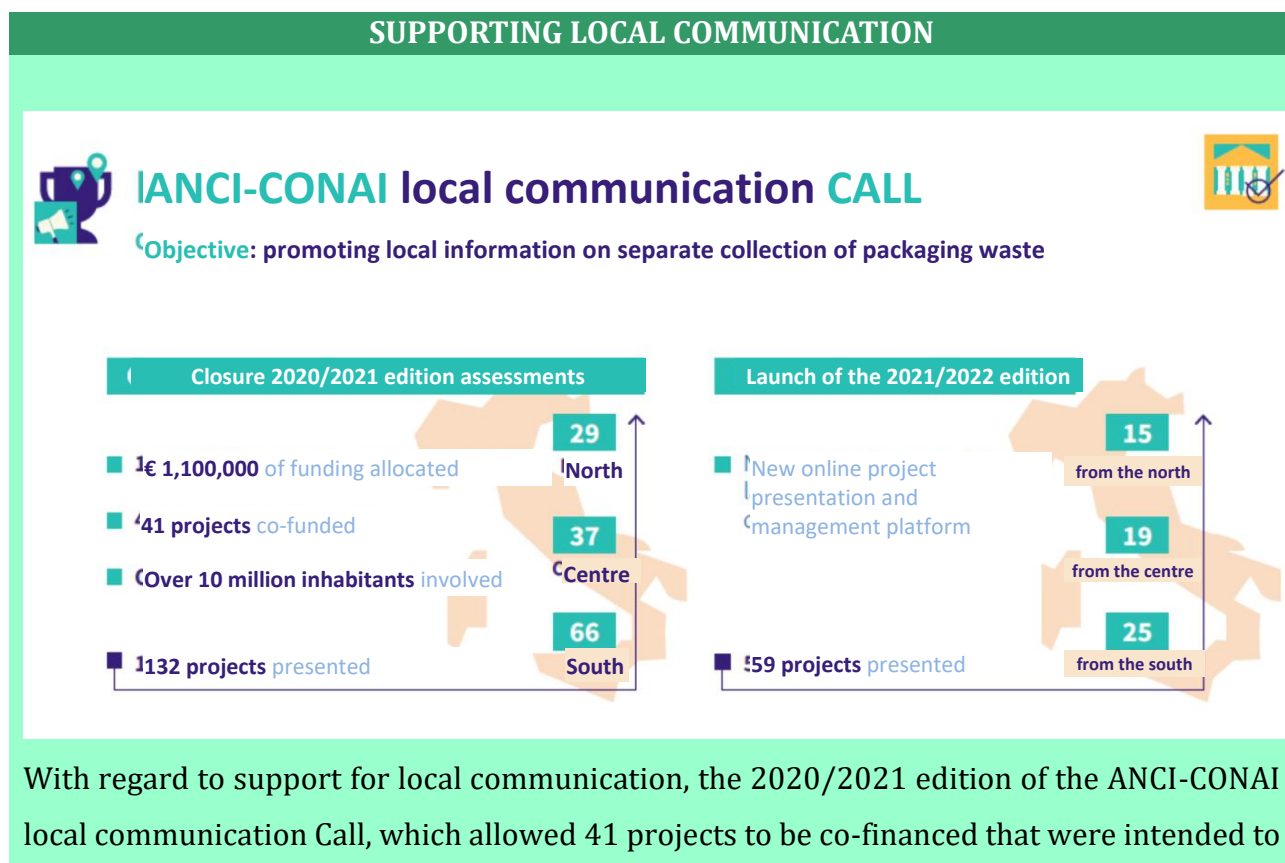
²⁶ Negotiations on the renewal of the Technical Annex for wood packaging have not yet been concluded. The RILEGNO Consortium has guaranteed the collection of the material delivered, continuing to apply the economic conditions signed with the municipalities and provided for in the previous Agreement in the first two months of 2021. A panel involving the MiTE is in place to evaluate possible solutions.

Framework Agreement instrument are a fundamental and effective element to guarantee high environmental performance, subsidiary to the market.

Let us recall the principle of subsidiarity that characterises the Agreement: the conventions with the packaging material consortia, and thus the delivery of separately collected packaging waste to them, are an option for municipalities, to which they have recourse when they cannot find more favourable market conditions. This principle is implemented with the possibility for municipalities, or bodies delegated by them, to enter and exit from conventions, depending, it is clear, on the greater or lesser opportunities offered by the market.

The breakdown of packaging waste delivered to the consortia under convention in the three macro-areas (north, centre and south), with the exception of steel, aluminium in the north and wood, confirms the trend over recent years of growth in the volumes intercepted in separate collections in the central and southern region of Italy, where significant margins for growth in separate collection still remain.

The growth in volumes in the south makes it an increasing priority to carry out structural intervention to bridge the gap in treatment and recycling plants that characterises these territories, as well as on the actual capacity installed and the addition of stakeholders as a determining factor for a more balanced development.



promote local information on the separate collection of packaging waste, selected from 132 proposals received from all over the country, mainly from southern regions (66 projects received) and to a lesser extent from central (37 projects received) and northern Italy (29 projects received). In view of the applications for financing submitted by government bodies, individual municipalities or in association, and waste management services delegated by them, with a total catchment area of more than 10 million inhabitants, over 1,100,000 euros was paid for the activities carried out and reported last year.

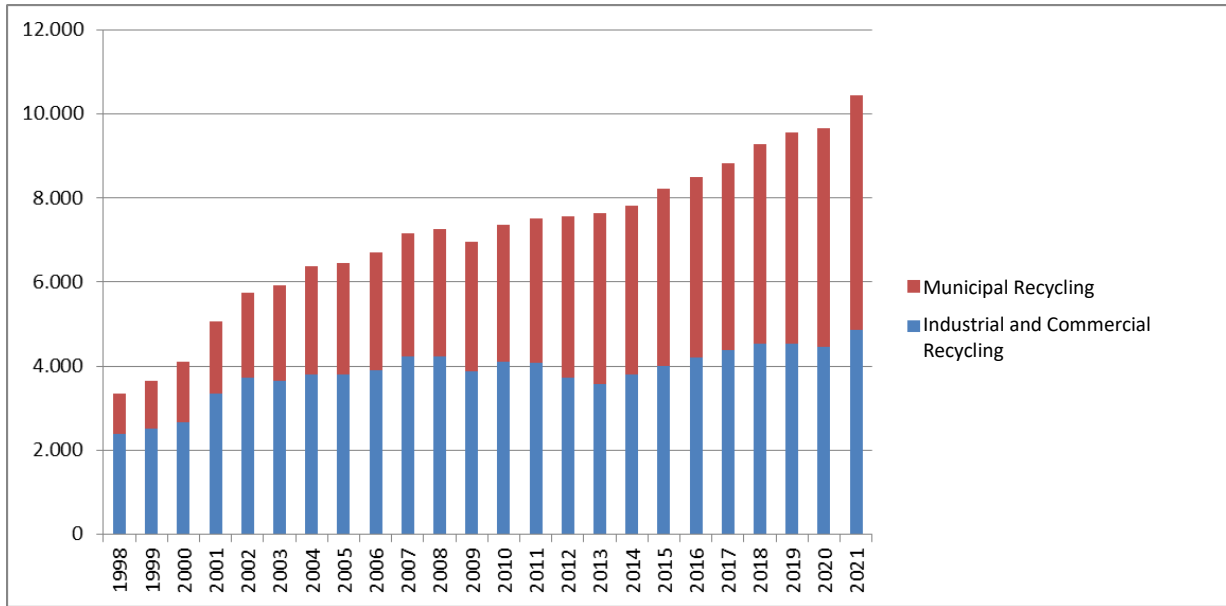
In 2021 the 2021/2022 edition of the ANCI-CONAI Call was then publicised, which, with a new dedicated online platform for submission and management of applications to participate, saw 59 projects compete mainly from southern regions of Italy (25 projects) and to a lesser extent from central (19 projects) and northern Italy (15 projects).

The above figures show that each project carried out involved on average about 15 municipalities, the process of grouping municipalities, which was among the objectives of the Call, in view of the management efficiencies it entails.

Very diverse regional contexts were reached, thanks to the setting of the parameters that assign the score: large metropolitan areas, provincial capitals, as mentioned, large groupings of municipalities and also smaller areas, but with particular cultural and natural value.

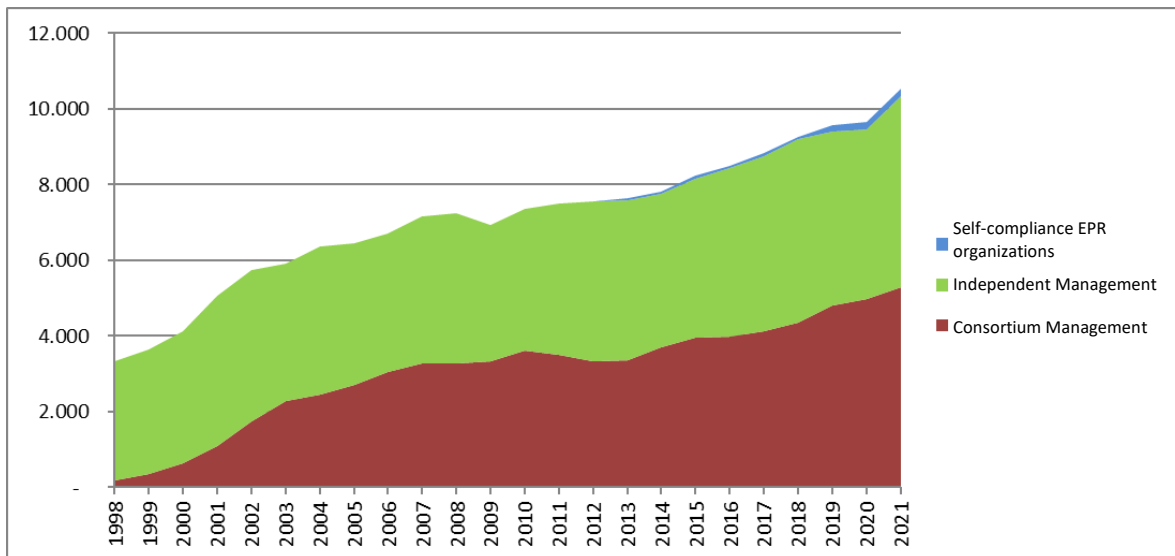
Returning therefore to recycling data, in order to ensure maximum transparency and accountability of national recycling performance, the trend in the quantities of packaging waste recycled by consortium, independent and autonomous management, as well as the contribution to recycling of quantities originating from municipal waste and commercial and industrial waste.

Trend in packaging waste recycled divided by channel of origin (kt)



Source: CONAI

Comparison between quantities recycled by consortium, independent and autonomous management



Source: CONAI

Summarising the 2021 recycling results by both channel of origin and management type, it can be said that the CONAI EPR organization ensured that 73.3% of the quantities from municipal collections were sent to recycling, while the proportion sent to recycling from private premises was 20.1%, thus confirming the priority of consortium intervention where the market alone would not guarantee recycling results. The figure for the stream managed from public premises

should be interpreted considering that it is an average of different situations: from supply chains where the recycling/recovery management of separate waste collection is almost totally left to the packaging material consortia for reasons linked to the complexity and cost of management, to supply chains in which independent operators can find economic opportunities for intervention, even temporarily, as in the case of paper and aluminium.

During 2021 packaging waste was recycled with the following management:

- 50% was attributable to the packaging material consortia, down by about 2 percentage points compared to 2020, precisely because of the economic recovery and the values of recycled materials that made market management more profitable;
- 48.0% managed on the market by independent operators, up by 2 percentage points compared to 2020;
- 1.9% attributable to the management of the self-compliance EPR organizations active in the plastic packaging sector (CONIP - CORIPET - PARI), which increased slightly due to the increase in CORIPET's stake in the PET beverage bottle market.

Below is a breakdown by type of recycling management in 2021.

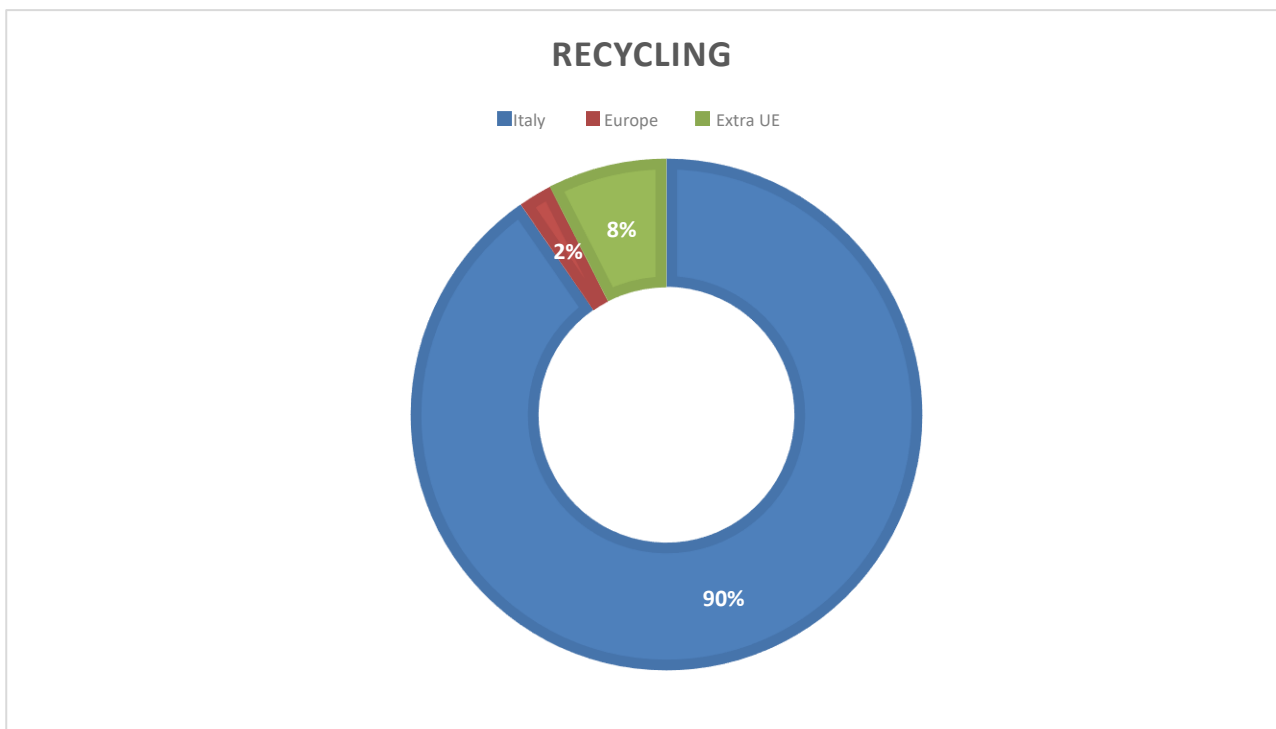
The incidence of consortium management shows variation from a minimum of 32% for aluminium to a maximum of 82% for glass packaging.



The results described above take into account the recycling of packaging waste produced nationwide in Italy in the context of both national and foreign recycling chains (EU and outside the EU). The national supply chains significantly increased their relevant share, from 85% in 2020 to 90% in 2021. 10% of the amount ends up being recycled abroad, in compliance with Decision (EC) 2005/207.

The option of reuse abroad particularly concerned waste paper, although a reversal of the trend

is also taking place in this sector: in 2021, about 830 kilotonnes were sent to recycling and recycled abroad, with a strong decline compared to 2020 (1.3 million tonnes). In 2021 the aluminium packaging scrap export stream established itself (approximately 10.4 kt)²⁷. The other sector for which the overseas stream is significant is that of plastic packaging waste reuse, in which European recyclers having certain requirements can participate in COREPLA auctions for the allocation of sorted products, part of the Coripet recycling takes place in Europe and to these streams managed by EPR schemes within Europe are added the quantities sent to recycling via independent operators abroad.



The options available for recycling processing include:

- physical/mechanical recycling, i.e. that used to recover the material. This option historically represents the vast majority of the total recycling and in 2021 was 89.8%;
- regeneration, i.e. activities carried out on packaging waste to allow for it to be subsequently used (9.2% of the total, and on the increase). This option is particularly relevant for the recycling chain for wood packaging waste, for which it represents 44% of total recycling;

²⁷The assessment of the overseas recycling figure of the aluminium waste and scrap chain is based on findings on foreign trade from ISTAT-COEWEB, to which some specific analysis is then applied in order to obtain the data for the stream of only the packaging product under analysis.

- Organic recycling or composting, i.e. the transformation of packaging waste into fertiliser which in 2021 represents 0.8% of national recycling; This option concerns biodegradable and compostable plastic packaging waste and is also accounted for in the wood packaging recovery chain. It is well known that also a portion of cellulose-based packaging (however negligible) is composted as a recycling option but, at the moment, the available data is insufficiently complete, which has led Comieco to choose not to present accounting of these streams;
- chemical recycling (0.2% of total recycling), carried out on the plastic packaging waste chain and intended both as first industrial experiments of chemical recycling and the transformation of residual waste from the sorting of plastic packaging waste into SRA (Secondary Reducing Agent).

The individual supply chains will now be analysed, highlighting how each has contributed to achieving the recycling results and also reporting on the role played by the preparation activities for reuse that affect some supply chains.

Specifically, the **steel sector** saw a decline in 2021 in the amount sent to recycling: -6.0%, which leads to a recycling result of 72%. Direct management by the RICREA Consortium is equal to almost 64% of the total sent to recycling, increasing compared to 2020, mainly as a result of the increase in the quantities managed from public premises, as a consequence of the considerable increase in the number of active conventions, established on the basis of the ANCI-CONAI Framework Agreement. 92 companies actively collaborated with the RICREA Consortium for the recycling of steel packaging in 2021. The main processing and recovery processes that steel packaging undergoes before being recycled are:

- Regeneration;
- Detinning;
- Crushing;
- Volume reduction.

With regard to the stream from private premises and indirect management by the Consortium, this includes typically industrial packaging waste (strapping, wire, cardboard corner guards and accessories) collected and recycled together with ferrous scrap categorised under “sheet metal”, other mainly industrial ferrous packaging in the ferrous scrap stream categorised under “collection” and “demolition” (monitored at steel mills) or in the “proler” category (monitored at recovery plants before crushing) and, finally, steel packaging waste, recovered from the treatment of ashes from municipal waste-to-energy plants, found at crushing plants

specialising in processing combusted iron.

The aluminium sector achieved 52.9 kt, guaranteeing the recycling of 67.5% of packaging put on the market. Value resulting from quantities of aluminium packaging managed by independent operators, up (+3.8% compared to 2020). The figure for recycling from 2021 (67.5%) is the same result attained in 2020, two years of slight decline from the pre-pandemic level of 2019, a sign that the industrial and consumer sectors have not fully recovered. On the other hand, in 2021 the 11% increase in the quantities of packaging put on the market and the 12% increase in the quantities recycled allowed the recycling rate to be consolidated compared with the previous year.

As of 2021 there were 270 plants in total where aluminium packaging waste is sorted and subsequently made available for collection by CIAL. The plants can essentially be broken down into the following categories:

- Multi-material plants (multi-light and multi-heavy), oriented towards obtaining single-material streams for recycling (aluminium, plastic, paper, glass);
- Processing plants for glass collected with metals;
- Municipal waste treatment plant;
- waste incineration and/or post-combustion waste processing plants.

The materials processed and prepared for recycling are then sent for smelting.

The paper sector saw significant growth (+9.7%) in the quantities of packaging waste sent to recycling, driven by an increase (+8.8%) in consortium and independently managed streams (+10.2%). This enabled the supply chain to recycle 85.1% of what was put on the market 60% of the collection for recycling managed by COMIECO is allocated to paper mills liable under extended producer responsibility, through a pro-rata cost-sharing mechanism (56 assigned plants: 32 in the north of Italy, 17 central and 7 in the south) and for the remaining 40% it is allocated by means of auctions (39 assignees per auction in 2020: 10 industrial recycling companies, 14 recovery service providers and 15 traders).

COMPOSITE PACKAGING

During 2021, activities continued for COMIECO in developing the collection and promotion of the sorting of paper-based poly laminate packaging suitable for containing liquid foodstuffs.

This is paper-based primary packaging, laminated with plastic and possibly aluminium. By way of example, this category includes beverage cartons (for milk, fruit juices, etc.) and the same types of packaging for other foodstuffs (sauces, tomato purée, etc.).

This activity is supported through the modulation of the environmental contribution, effective from January 2019, which allows COMIECO to have an additional contribution (Extra fee at €20/t) to remunerate sorting activities and investments for sorting and recycling operations. The waste matrix from which the sorting of this packaging is carried out continues to be predominantly the light multi-material separate collection, but there is an increase in the number of plants for sorting this packaging from paper and cardboard collection, aided by the need to improve the quality of paper and cardboard.

In 2021, the amount of dedicated recycling was confirmed at 5,600 tonnes (the same result as in 2020). Considering that the amount put on the market in 2021 went down by 3%, the confirmation of the quantities sent for dedicated recycling shows an increase, albeit still too small.

On the other hand, with regard to joint recycling with paper, which continues to be the predominant means of collection and recycling in Italy, the quantity of paper-based polylaminate packaging for the containment of liquids sent to recycling is estimated to be 23,100 tonnes, an increase of 8% compared to 2020. Considering the total amount of paper-based polylaminate packaging suitable for containing liquids sent to recycling in 2021, the recycling percentage is thus approximately 36.5% of the amount put on the market.

Source: COMIECO

The wood sector achieved a result of 64.7% sent to recycling, with 2.2 million tonnes recycled. The raw material recycling refers to the production of chipboard, which is then used in different applications, typically for the furniture industry (destination of about 95% of post-consumer wood waste). A niche use is the production of cellulosic pulp for paper mills, replacing virgin fibre. Other applications include:

- The creation of wood-cement blocks for the construction industry and certified as green building materials;
- The production of pallet blocks, i.e. to create blocks for pallets to replace those made with virgin raw materials. This product has also obtained certification from ReMade in Italy.

The setting up of the network of consortium platforms for the collection of municipal waste from public premises and special packaging waste from the industrial circuit plays a vital role in the system organised by RILEGNO. In 2021 there were 394 collection platforms around Italy.

The importance of pallet regeneration was established, with over 908,000 tonnes recovered, an increase of 7% from 2020.

Another market for wood packaging waste is composting (about 44.8 thousand tonnes), which also shows growth due to the higher quantities of organic fractions processed in Italy and which relates to crates, pallets and corks in particular. This quantification was possible thanks to the study and market analyses carried out by CIC and RILEGNO.

The plastic supply chain saw a significant increase in 2021 in the quantity recycled, at 4.4%, achieving a figure of 55.6% for reuse by recycling for packaging put on the market, with almost 1.2 million tonnes recycled. Consortium management grew, reaching 59.8%.

With regard to consortium management, established streams for beverage containers (159 kt) decreased – attributable mainly to the effect of CORIPET – and for bottles (73.8 kt), while film (141.9 kt) and PP packaging (51.9 kt) grew. In terms of quantity, it is worth noting the significant increase in the recycling of mixed plastics (221.9 kt), +38% from 2020. All factors that contributed to the increase in the share of recycling managed by the Corepla consortium. Then there were also interventions by COREPLA for recycling from private premises, streams that grew in 2021, in particular through the platforms for drums and tanks for restoration for reuse or recycling (33 active agreements with 27,280 tonnes processed, with an increase of 26% compared to 2020) and the platforms for expanded polystyrene packaging (30 active agreements with quantities processed amounting to 10,323 tonnes with an increase of 20% compared to 2020).

It is worth noting that, following the signing of the agreement between COREPLA and the CARPI consortium, the network of platforms offering to collect plastic packaging waste from business establishments and industries was developed, with quantities up by 16% and amounting to 155 kt. This figure comes under the independently managed stream.

To these flows must be added the recycling quantities of the CONIP and PARI Self-compliance EPR organizations, which represent a total of 81 kilotonnes, equal to 6% of the total quantity recycled for the chain, and, from 2021, the CORIPET organization, which manages PET packaging suitable for containing liquid foodstuffs and which, as a result of the pro-rata allocation of the stream intercepted from municipal separate waste collection, recycled a further 10%, equal to 121 kt, to which must be added 2 kt recovered through digital recycling stations.

With regard to the trend in recycling activity from the recognised self-compliance EPR organizations, the following is noted:

- The P.A.R.I. system declared the achievement of 100% recycling for PE film that comes under the system. This percentage results from the change in the system's method for measuring results due to the transition from the concept of “own” waste to the concept of “equivalent” waste, as per Article 221 of the TUA as amended by Legislative Decree 116/2020.
- CONIP (crates): reached 64.6 kt of plastic crates sent to recycling in 2021, thus taking the consortium's recycling performance to 74% of the total put on the market.
- CONIP (pallets): recycling for 2021 reached 2.2 kt, corresponding to -16% compared to 2020, in line with the restrictions that occurred in that year. As this is a closed recycling management model, the figure for packaging put on the market is interdependent with the recycling figure.

The biodegradable and compostable plastic chain in 2021 (first year of operation) organically recycled 38.4 kt of packaging, a recycling percentage of 74% in relation to what was placed on the market. The recycling rate is calculated by deducting the proportion found in the residual waste from the incoming compostable bioplastic packaging waste at the plants and has been calculated on a conservative basis. The main factor leading to the achievement of the recycling result indicated is certainly the correct application of the national regulations governing the collection and recycling of compostable bioplastic packaging together with municipal wet waste (Article 182-ter of Legislative Decree 152/2006) and which introduced the mandatory collection of municipal wet waste throughout the country as of 1 January 2022. Over time, biodegradable and compostable bags conforming to harmonised standard EN 13432 have proven to be a key element in boosting the rolling out of the wet waste collection system. In fact after their first use for transporting goods, compostable bioshoppers can be reused in the home for the collection of wet waste and sent with this for organic recycling.

The glass supply chain in 2021 sent 76.6% of the packaging put on the market for recycling, with almost 2.2 million tonnes of glass packaging waste recovered (+1.8%), of which 1.80 million tonnes from consortium management, as a result of the consortium's efforts to send increasing quantities for recycling and to guarantee glassworks a production of scrap from products made in Italy. For some years now, the quantities sent to recycling have also included the streams of scrap sent to the ceramic industry (ceramic sand) and the building industry in

general, which have seen a significant increase in recent years yet still represent a far smaller share of the possible applications for recycling. The remaining part of glass packaging scrap, 99.5% of the total, comes under the glass production cycle. In 2021 the Italy national separate collection grew 0.9%, reaching a total of approximately 2,417 kt. Coreve directly managed, through local agreements, approximately 2,134 kt of glass packaging waste, corresponding to 88.3% (in 2020 it was 87.3%) of the separate collection.

Further details are available in the institutional documents for the packaging material consortia and the self-compliance EPR organizations.

3.1.6. Reuse for energy recovery

The energy recovery option, governed by EU and national legislation, represents another opportunity towards the reduction of delivery to landfill and the recovery of matter in the form of energy.

The reference legislation today no longer provides for a recovery target. Nevertheless, CONAI intends to continue monitoring these streams in order to ensure greater traceability of information on the supply chain and at the same time verify the supply chain's contribution to reducing the delivery of waste to landfill to below 10%, another target laid down in the legislation.

Both the waste from the treatment of packaging waste streams managed directly by the packaging material consortia (waste from mixed plastics processing, wood-cellulosic waste) and the packaging waste in municipal waste sent for energy recovery via incineration and secondary solid fuel (combustibile solido secondario – CSS) production plants contribute to the determination of the energy recovery figure.

With regard to the latter stream, CONAI entered into an agreement with the companies owning the plants to enable the market analyses necessary to determine the quantity of packaging waste sent for energy recovery to be carried out, through specialised third-party companies. It should also be noted that for incineration plants to be considered as recovery plants, they must have an energy efficiency equal to or above a certain threshold (as per Annex 1 of Environmental Ministerial Decree of 7 August 2013).

In 2021 2 TVZ plants out of 61 contracted plants were considered suitable for the purpose of assessing the amount of packaging sent to incineration, and 31 alternative fuel production (and some that were simultaneously incineration) plants, a total of 55 plants, all meeting the energy content recovery efficiency criteria laid down by Legislative Decree 152/2006, as amended by the Environmental Ministerial Decree of 7 August 2013.

Thus, overall 55 (24 TVZ and 31 fuel production) plants at which market analyses were carried out to determine the quantities of packaging destined for energy recovery in 2021. In order to corroborate the data with particular regard to alternative fuel production plants, where in some cases there were difficulties because of the extremely small size of what was being analysed, the number of market analysis sessions at these plants doubled in 2021, bringing the total number to 90 compared with 52 sessions the previous year. In addition, to take into account the needs of specific consortia, the market analysis report was supplemented with data on additional types of packaging (containers for liquid foodstuffs [CPL], PET and biodegradable and compostable plastic packaging)

The results of the product analyses were then outsourced to a specialised third-party company, which proceeded to determine the overall figure for packaging waste sent for energy recovery, incorporating information from the supply consortia and estimates for streams for which monitoring could not be carried out.

The estimation process, as in recent years, used correction coefficients to take into account the moisture absorbed by the cellulosic waste present in the unsorted waste destined for incineration for paper and cardboard packaging waste;²⁸ for aluminium packaging waste, the possible pollution of the final figure by contaminants in other materials²⁹, and lastly for plastic packaging waste, the moisture and organic material, which despite the cleaning carried out during manual sorting still remains stuck to the packaging. The use of these correctives is part of the policy for refining the data and information provided by CONAI.

Quantities relating to the recovery of waste from processing are then added to these quantities, and the most significant stream is that regarding the recovery of what is known as plasmix

²⁸ For this reason, a correction factor was introduced to bring the value of energetically recovered waste to 10% moisture content, as is already the case for recycled pulp according to UNI EN 643.

²⁹ By comparing the amount of incoming aluminium packaging waste sorting plants with the amount leaving the plants by means of product identification, a constant overestimation of the presence of aluminium in analysis results, due to the low weight of individual aluminium packaging and the high percentage incidence that may have the material bonded to or incorporated within the packaging waste.

(portion of plastic packaging left over from the process of sorting separate waste collection that cannot be mechanically recycled with current technology).

In recent years, there has been a shrinkage of the space available for energy recovery at incineration plants and a simultaneous increase in the volumes sent to cement works, after production of alternative fuel (Secondary Solid Fuel – CSS) in duly authorised plants. The shrinkage in volumes at incineration plants is explained by the continuing need to support emergency areas as well as the low technical compatibility of PLASMIX with the technologies currently installed in the region. A not insignificant amount of PLASMIX was sent to landfill, particularly in those regions with insufficient or no plant facilities. However, these quantities are steadily decreasing, given the increase in spaces for recovery throughout Italy and the partial closure of landfill spaces for special waste.

Similarly to what has been done in recent years, in order to react to the rise in market prices and to increase the possibilities of energy recovery channels where PLASMIX could be sent, intensive marketing activities continued in 2021 at foreign cement works/recovery service providers operating for example in Germany, Austria, Greece and Slovenia.

During the current year, *ad hoc* sector studies will be launched with particular reference to the potential of sorting facilities with a focus on cement works.

Overall in 2021 the amount of packaging waste sent for energy recovery decreased by about -5% compared to the previous year, reaching 9.3% of the amount put on the market (compared to 10.6% in the previous year)

Packaging waste sent for energy recovery

	2020	2021	Annual variations
MATERIAL	Ktonnes	Ktonnes	%
STEEL	-	-	0%
ALUMINIUM	4.5	3.7	-18%
PAPER	347.3	333.8	-4%
WOOD	67.1	69.2	3%
PLASTICS AND BIOPLASTICS	985.7	925.1	-6%
GLASS	-	-	0%
TOTAL	1,404.6	1,331.8	-5%

Source: CONAI - Packaging material consortia

Percentage of energy recovery of packaging placed on the market.

	2020	2021	Annual variations
MATERIAL	%	%	Point %
STEEL	0.0%	0.0%	0.0%
ALUMINIUM	6.4%	4.7%	-1.7%
PAPER	7.4%	6.4%	-1.0%
WOOD	2.2%	2.0%	-0.2%
PLASTICS AND BIOPLASTICS	44.6%	40.7%	-3.9%
GLASS	0.0%	0.0%	0.0%
TOTAL	10.6%	9.3%	-1.3%

Source: CONAI - Packaging material consortia

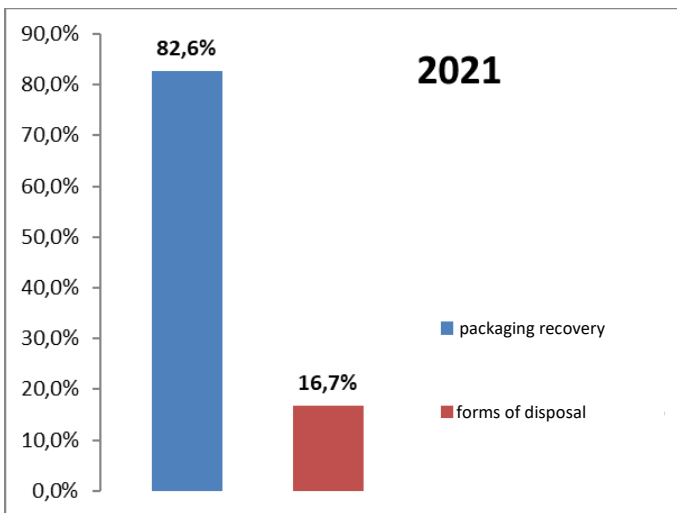
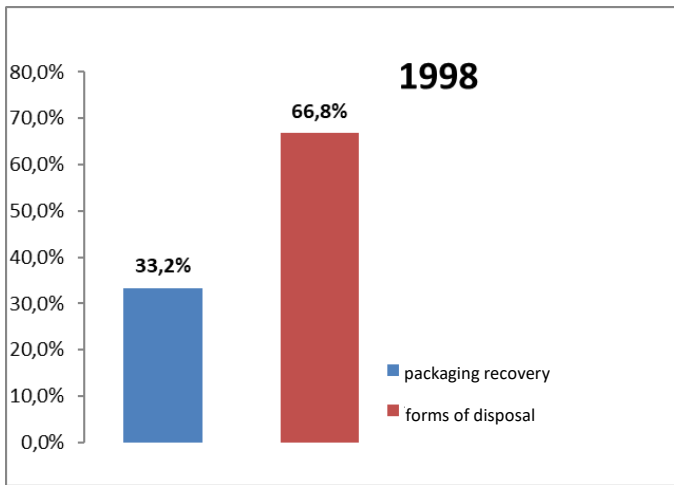
It follows from the above that the overall recovery of packaging, to be understood as the recovery of material and energy, in 2021 was almost 12 million tonnes, with a result equal to 82.6% of the amount put on the market, slightly lower than the previous year, due to the increase in the amount of packaging put on the market.

Packaging waste sent to recycling as a total and as a percentage

	2020	2021	Annual variations
Packaging waste sent to recycling as a total (ktonnes)	11,055.26	11,879.69	7.5%
Total recycling of packaging put on the market (%)	83.4%	82.6%	-1.0 point %

Source: CONAI-Packaging material consortia

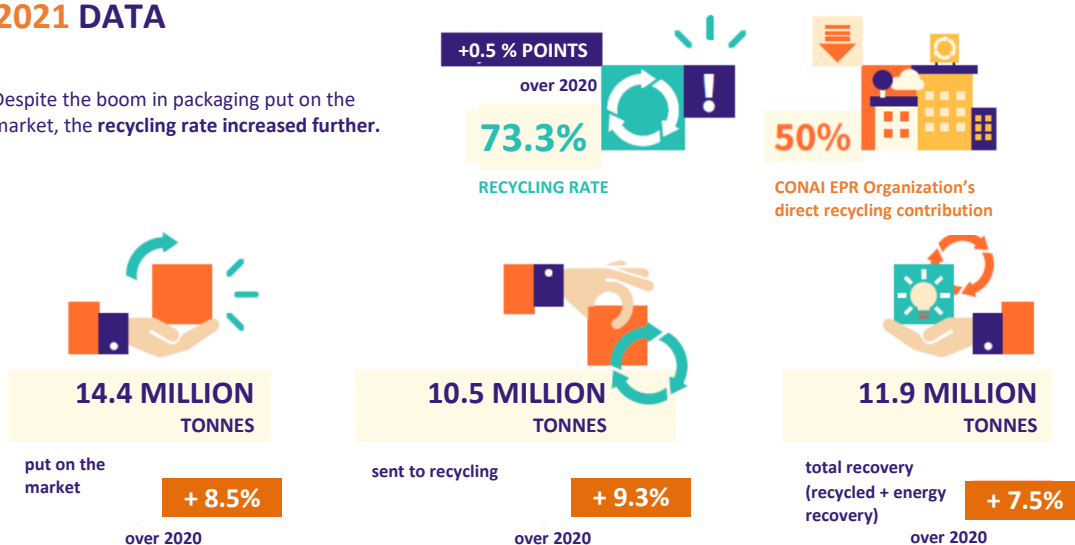
Evolution in the procedures for the management of packaging waste produced



SUMMARY OF 2021

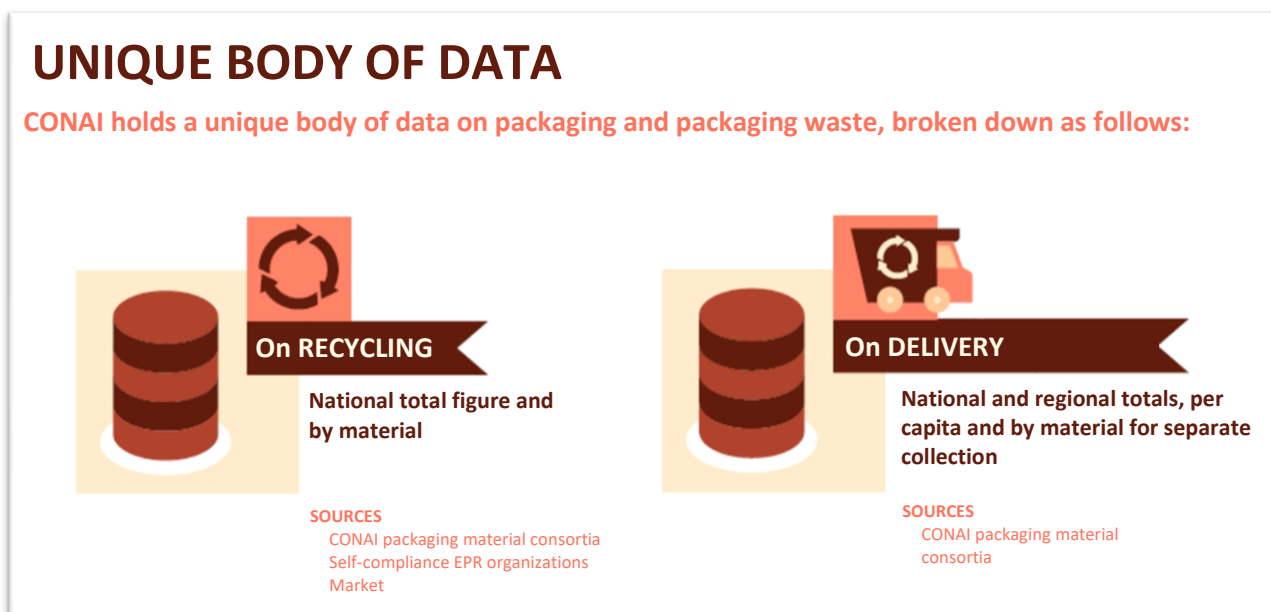
2021 DATA

Despite the boom in packaging put on the market, the recycling rate increased further.



3.1.7 Reports and official documents

CONAI's institutional duties include **the drafting of the documents that are mandatory by law**, liaison and coordination with public administrations, packaging material consortia and other economic operators, as well as running communication campaigns and the collection and submission of recycling and recovery data to the competent authorities.



Numerous documents (both required by law and voluntary) are in fact provided annually to the national authorities to report and present their work and lines of intervention in a transparent form.

The mandatory ones include:

- *General Programme for the Prevention and Management of Packaging and Packaging Waste* to be submitted by 30 June each year;
- *Specific Plan for the Prevention and Management of Packaging and Packaging Waste* to be submitted by 30 November each year;
- *Single Declaration Model* (MUD), sent to the National Register of Waste with regard to the specific Packaging Notice, consolidating the information regarding the obligations introduced on the issue of “*plastic bags*”;
- *Annual Model for Submitting Data to ISPRA* for the purpose of preparing the periodic report to the European Commission on the implementation of Directive (EC) 94/62 as amended on packaging and packaging waste (by June each year).

Since 2014 CONAI has been committed to having an **Environmental Management System** – compliant and certified according to ISO 14001 – and in 2016 achieved European EMAS registration – IT 001784, reporting on the environmental performance of the consortium management as well as its own. The methodology underlying the definition of environmental benefits – expressed in terms of quantities of packaging and packaging waste recycled and recovered, second raw materials produced and raw materials saved, CO₂ avoided and energy saved – and financial benefits generated by CONAI and the CONAI EPR organization, in addition to those derived from the activities of independent operators is calculated using the Life Cycle Costing Tool; a proprietary tool updated annually with the latest data and indices from the literature. In addition to the indicators set out above, other specific indicators have been defined for each individual supply chain.

Underlying this choice is a strong sense of responsibility and commitment of the organization towards its business in line with the principles and aims of its Environmental and Corporate Policy.

ENVIRONMENTAL POLICY

The Environmental Policy was updated and amended in February 2022 with the signature of CONAI Chair Luca Fernando Ruini and has now been fully implemented (see Appendix)

Ensuring the growing contribution to the circular economy and environmental protection, strengthening relations with stakeholders, development of skills, full compliance with mandatory and voluntary requirements, accountability and improved organizational processes are the main points of CONAI's Environmental Policy. It helps define the principles, objectives and actions for environmental monitoring and improvement.

Environmental policy



The National Packaging Consortium (CONAI) is a legal entity under private law, is non-profit and must ensure the global targets for recovery and recycling of packaging waste are achieved.

Consortium members are companies that produce and use packaging.

CONAI determines and charges the CONAI Environmental Contribution to producers and users of packaging which is used as a priority for the collection of primary packaging or otherwise delivered to the public service. The fee is modulated according to their reusability and recyclability.

CONAI directs and guarantees the activities of seven packaging material consortia.

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Following the renewal of the EMAS30 Policy and Environmental Declaration, CONAI defined the new Environmental Programme, over two levels (Consortium Management and Organizational Management) and 14 points for action, focusing on the significant direct and indirect environmental aspects of the organization. The objectives for the 2022–2025 three-year period, as reported in the EMAS Environmental Declaration, were defined following principles and guidelines laid down in the Corporate Policy. The individual indicators quantify the commitment of CONAI to pursuing objectives and may be transposed onto strategic KPIs used nationwide (SDGs, BES [benessere equo e sostenibile – equitable and sustainable welfare]).

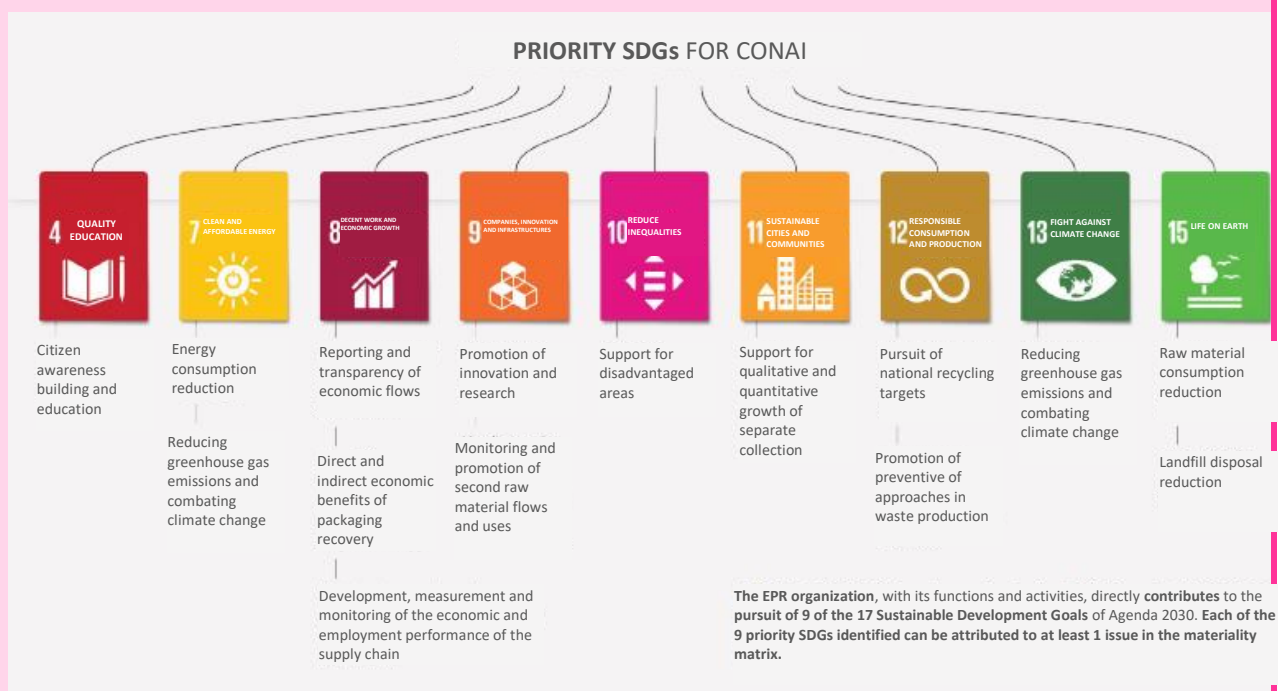
Also since 2014, the consortium also uses the **Sustainability Report**, which is drafted in such a way as to present the results in language that is accessible and easy to understand for everyone. The new Sustainability Report, complying with GRI standard requirements was presented in October 2021 (see declaration of verification in the appendix).

³⁰ <https://www.conai.org/download/dichiarazione-ambientale-aggiornata-al-2022/>

CONAI REPORT ON SUSTAINABILITY

As already noted, CONAI has reported on its non-financial activities since 2014 through the annual publication of the **Sustainability Report**, which complies with GRI standard requirements and is prepared according to criteria of brevity, accessibility and effectiveness. CONAI's activities have always been aimed at environmental protection and never before have they been so central to governance policies at international level. The Agenda 2030 for sustainable development, adopted by all UN member states in 2015, provides a common plan for peace and prosperity for life on the planet, now and in the future. The project is centred around 17 Sustainable Development Goals (SDGs), which are an urgent call to action by all countries in a global partnership.


The CONAI EPR organization directly contributes to the pursuit of at least 9 of the 17 Sustainable Development Goals reported annually in the sustainability report.






To identify a shared statistical information framework as a tool for monitoring and evaluating progress towards the goals of the Agenda, the United Nations Statistical Commission established the Inter Agency Expert Group on SDG, which together defined over 200 indicators.


ISTAT, together with national system on statistics Sistan, is committed to producing statistical measures for the monitoring of progress towards Sustainable Development Goals.

The measures take into account the indicators defined by the Expert Group together with certain specific data from the context of Italy, also derived from the Bes framework.

SDGs	GLOBAL INDICATORS	MAIN TREND	MAIN CONAI TOOLS SUPPORTING DATA
Goal 4 - Quality education	<p>4.3.1 - Rate of participation by young people and adults in informal education and training in the last 12 months, by sex</p> <p>4.b.1 - Volume of public aid to development for scholarships per sector and type of study</p>	<p>In 2020, 27.8% of young people aged 30-34 has a degree or higher education qualification (34.3% of women and 21.4% of men), a figure that has remained steady over the last 3 years. The level remains among the lowest in Europe. The European Union has achieved and surpassed the goal of 40% of individuals possessing a higher education qualification. With 15.1 per thousand of 20-29-year-olds graduating in STEM (Science, Technology, Engineering and Mathematics), Italy was below the European average by about 4 points per thousand in 2018. Italy is also lagging compared to the rest of the European Union in terms of digital skills: in 2019 only 41.5% possessed at least basic digital skills (in the EU27 it was 56%), with large differences between ages and sexes</p>	<p>Specific Programme 10 - Training and Skills</p> 
Goal 7 - Ensure access to affordable, reliable, sustainable and modern energy systems to all	7.1.2 - Proportion of the population that primarily relies on clean fuel and technology	After the slight drop recorded in 2018, overall energy consumption from renewable sources on gross final energy consumption started growing again in the last	LCC Tool and DA - Greenhouse gas emissions avoided

		year, to 18.2%, signalling a 5.4 per cent improvement in the last ten years. For the sixth consecutive year, Italy is among the European countries that exceeded the target assigned by the 20-20-20 goals.	
Goal 8 - Foster lasting, inclusive and sustainable economic growth, full and productive employment and decent jobs for all	8.b.1 - Existence of a developed and operative national strategy for youth employment, as a distinct strategy or as part of a national employment strategy.	In 2020, the evolution of GDP was strongly affected by the COVID-19 crisis and the related partial suspension of production activities: the gross domestic product suffered an exceptional fall in Italy (-8.9%), greater than in both the eurozone (-6.5%) and the European Union (-6.1%). Per capita GDP went down by 8.4%.	Specific Programme 10 - Training and Skills 
Goal 9 - Build resilient infrastructure and promote equitable, responsible and sustainable innovation and industrialisation	9.2.1 - Added value of the manufacturing industry as a percentage of per capita GDP 9.2.2 - Employment in the manufacturing industry in proportion to total employment 9.4.1 - CO2 emissions by unit of added value	In 2020, pandemic restrictions led to a reduction in the value added per inhabitant of the manufacturing industry, but its weight on the total economy in terms of value added and employment remained unchanged. Companies located in the southern regions of Italy show a greater propensity to use e-commerce than companies located in the rest of the country.	LCC Tool and DA - Greenhouse gas emissions avoided LCC Tools and DA - Raw material savings LCC Tools and DA - Primary energy savings LCC Tools and DA - Economic activity generated by the system
Goal 10 - Reduce inequalities within and between nations	10.1.1 - Rate of growth of household expenditure or per capita income of the poorest 40 per cent of the population	In 2020, the gross disposable income of families residing in Italy decreased compared to the previous year (-2.8%), which was mitigated thanks to the economic policies adopted by the	LCC Tools and DA - Economic activity generated by the system Specific Programme

		government to mitigate the impact of the pandemic. The drop in purchasing power was of similar intensity (-2.6%).	4 - Interventions to support local authorities 
Goal 11 - Making cities and human settlements inclusive, safe, resilient and sustainable	11.6.1 - Percentage of municipal solid waste collected regularly with suitable final disposal out of the total waste produced in the city	Critical issues connected to land management and use remain. The index of soil sealing and land consumption per capita increased for the fifth consecutive year, to 355 m2 per inhabitant in 2019 (353 in 2018). In 2019, the decrease in the share of municipal waste delivered to landfill continued, down from 21.5% to 20.9%, but the volume of municipal waste collected per inhabitant increased, exceeding 500 kilogrammes. Air pollution levels continued to fall, but at an ever slower pace, and with values remaining above the EU27 average in 2019	Specific Programme 4 - Interventions to support local authorities Specific Programme 5 - Local communication call 
Goal 12 - Guarantee sustainable models of production and consumption	12.2.2 - Domestic material consumption, domestic material consumption per capita and domestic material consumption per unit of GDP 12.4.2 - (a) Hazardous waste produced per capita; and (b) percentage of hazardous waste treated, by type of treatment	Over the last five years, the progress in containing the material consumption that has characterised Italy since 2010, enabling the Italian economy to profit in terms of efficiency in production processes, has come to a standstill. In 2019, domestic material consumption (CMI) by unit of GDP was steady compared to the two-year period 2017-2018 (0.28 tonnes per 1,000 euros). Despite the progressive stabilisation, in 2019, Italy	LCC Tool and DA - Greenhouse gas emissions avoided LCC Tools and DA - Raw material savings LCC Tools and DA - Primary energy savings Specific Programme 12 - Accountability

	<p>12.5.1 National recycling rate, tonnes of recyclable packaging</p> <p>12.7.1 - Degree of implementation of sustainable policies and action plans on public supply contracts</p>	<p>was among the European Union countries with the lowest CMI, both per inhabitant and per unit of GDP, ranking in first position in the per capita classification and in fourth position in that with respect to GDP.</p> <p>In 2019 the slight increase in generation of municipal waste per inhabitant already recorded the previous year was confirmed: this was +2.0% in 2018 and +1% in 2019. Nevertheless, advancements were reported in waste management processes and reconversion into new resources.</p> <p>The circular material utilisation rate showed an improvement in Italy's performance above the EU27 average, both in the last decade and in the last year, bringing Italy to fourth place in the European ranking.</p> <p>The recycling percentage (+2.5 percentage points) and the percentage of separate collection of municipal waste (+3.1 p.p.) also increased in 2019. There are, however, difficulties in relation to the significant regional disparities in the separate collection, which in any case remained below the legal targets in 2019.</p>	<div data-bbox="1189 197 1380 358" style="background-color: #FFD700; padding: 5px; display: flex; align-items: center; justify-content: center;"> 5  <p style="margin: 0; font-size: 10px;">Accountability</p> </div> <p style="margin-top: 20px;">Remade in Italy</p>
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Goal 13 - Take urgent measures to combat climate change and its consequences	13.2.2 - Total greenhouse gas emissions by year	<p>In the EU27, greenhouse gas emissions have been decreasing, reaching an index of 81.0 in 2017 compared to the base year of 1990, which further reduced to 79.3 in 2018. The tendency toward decoupling in the relationship between the dynamics of emissions from production activities and GDP was established over the past year.</p> <p>In the same year, household concern about climate change decreased by one percentage point to 70%, but increased over the years (it was 63.3 per cent in 2012).</p>	<p>LCC Tool - Greenhouse gas emissions avoided</p> <p>LCC Tools - Primary energy saved</p>
Goal 15 - Protect, restore and encourage sustainable use of the earth's ecosystem, manage forests sustainably, combat desertification, stop and reverse land degradation, and stem the loss of biological diversity	15.2.1 - Progress towards sustainable forest management	<p>Forest cover in Italy continues to increase (31.7% in 2020), but the global trend of deforestation, which mainly affects the least developed countries, is not stopping.</p> <p>In 2019, the growth of forest areas certified for the sustainability of production processes continued. Their extension in relation to the area of Italian forests, however, remains very limited (7.6 hectares every 100, against an EU average of 45).</p>	LCC Tool - Greenhouse gas emissions avoided

Some of the significant values emerging from the latest sustainability report speak of **economic benefits** of **packaging waste management** to the value of **one billion 274 million euros**. The economic value of **material recovered through recycling** is **€381 million** while the **economic activity generated** by the supply chain is **€616 million**, in

addition to the **indirect benefit** of the **economic value of CO₂ avoided** which is calculated at **€225 million**.

In this context, the value of the fees paid to Italian municipalities to support the costs of the separate collection of packaging, which to date accounts for about 8% of the waste produced in Italy should be noted: in 2020 CONAI paid **€658 million** to local bodies around the country.

Environmental indicators show a figure of **4.4 million tonnes** of CO₂ not emitted due to the activities of the CONAI EPR organization (almost **10,000 round-trip flights Rome–New York**), almost **24 terawatt-hours saved** (equivalent to the primary energy consumption necessary to meet the average household electricity consumption of around **7 million households**), **4.631 million tonnes** of raw material saved (equal to the weight of **460 Eiffel Towers**) thereby preventing **175 new medium-sized landfills** in 23 years.

Over the course of 2021, there were also numerous **information initiatives** with regard to ANCI and discussions with national and local authorities, at the time of the submission of other publications/documents both for the launch of memoranda of understanding for the development of separate collections with regions, provinces and municipalities, and during conferences on various topics (from the prevention of the environmental impact of packaging, to differentiated collection aimed at recycling, to the broader issue of the green economy and circular economy).

3.1.8 Validation of the procedures for determining recycling and recovery results

In the context of achieving the recycling and recovery targets set by the legislation, CONAI, the packaging material consortia and the Conip self-compliance EPR organization have voluntarily set up a management system for themselves as an additional guarantee for institutions to achieve the set targets. This management system was set up in 2006 under the name “Recycling Objectives” and involves a series of activities which CONAI, the packaging material consortia and the Conip Self-compliance EPR organization undergo. The entire validation process – including the procedures used to determine the data of what is put on the market, recycling and recovery – is independently verified by a specialised third-party body.

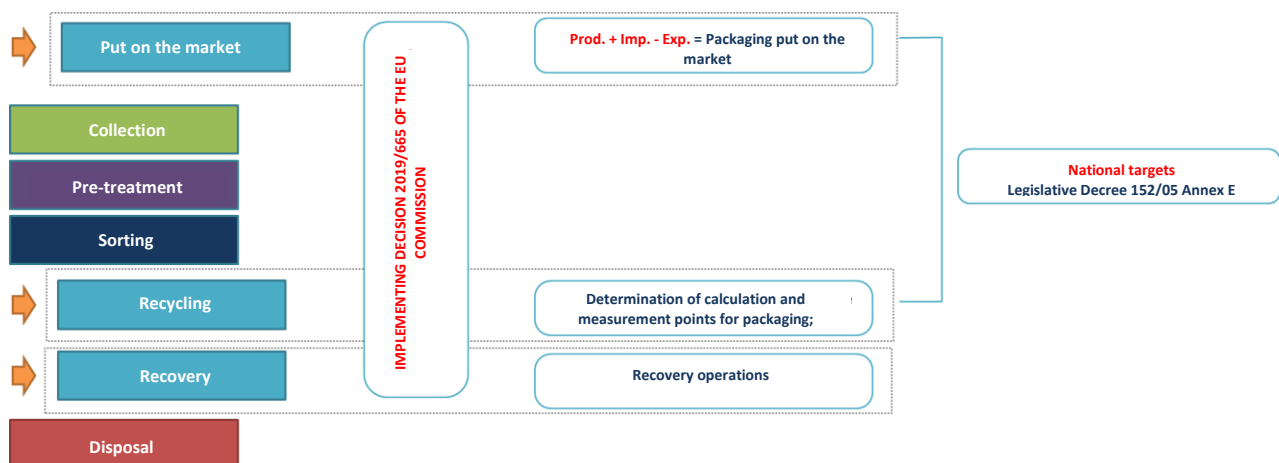
- The Recycling Objectives Project is a management system – aimed at verifying the quality of the data for determining the quantities of packaging waste generated, recycled and recovered with energy production – set out over 3 reference documents:
 - the General Criteria, which set out the principles and methodologies for defining validation procedures;
 - the Technical Specifications, specific to the individual member parties (CONAI, packaging material consortia and the Conip self-compliance EPR organization) and drawn up in compliance with the General Criteria, which specify the procedures and individual methods for determining the quantities of packaging waste generated, recycled and recovered with energy production;
 - The Regulations, which identify the organization of independent audits and the way they are conducted and recorded; specifically
 - pre-audit document analysis (optional);
 - document audit:
 - stage 1 intended to demonstrate compliance with the CONAI General Criteria;
 - stage 2, auditing of the implementation of the requirements examined in stages;
 - witness audits, on-site supporting the member party at control/monitoring points of the data processed and/or used to support the procedures for determining packaging placed on the market, recycling and recovery;
 - extraordinary post-audit, necessary upon the occurrence of deficiencies considered to be impediments.

Participation in the project requires a strong operational and economic commitment and involves all stakeholders in the recycling chain at different levels. In 2021 witness audits were conducted at 10 treatment and recycling plants representative of all packaging materials. The activities conducted in 2021 and relating to the 2020 data were successfully completed and no findings were found at any level. The result of the activity is summarised in the judgement issued to CONAI during the audit carried out by the certifying body (see audit statement in the appendix).

Although the work reflects a high degree of maturity and completeness, CONAI intends to outline new opportunities for improvement in parallel to the Consortium's increasingly

inclusive role within packaging waste EPR schemes. Specifically, this is represented not only by the involvement of all EPR schemes relating to packaging waste, but especially by the definition of a standardisation project that uniquely shares and defines the principles of “Recycling Objectives” and cultivates the development of skills that are increasingly necessary in this context.

The draft standard, submitted to UNI (Italian Standardisation Body) by CONAI and officially “*Subjected to study*” in January 2022, aims to define a standard process for validating the procedures by which data are determined on packaging put on the market, recycling and recovery of packaging waste from EPR schemes, in order to ensure the highest quality of the data provided in accordance with the new calculation methods set out in EC Decision 2005/270 as amended by transposition of Implementing Decision (EU) 2019/665 on 26/04/2019. The process will fully involve the UNI Working Group and be organised into different stages (*Study; Drafting of the Project, Public Inquiry, Publication*) for a maximum duration of 18 months³¹. Below is an outline of the scope of the draft standard.



³¹ Rules on the performance of standardisation activities by the UNI System

4.

Management income statement

4.1 CONAI management income statement

Financial year results

Below are the management income statement, the management balance sheet for the financial year, and an analysis of the main deviations compared with the previous year's figures. All figures are presented net of the separate management excl. Replastic

The financial statement, as 31 December 2021 closed with a surplus of 5,567,101 euros, compared to a deficit of 441,370 euros last year. The revenue and costs are categorised according to the provisions of Article 15, paragraph 2 of the CONAI Articles of Association. The shareholders' meeting in June 2018 approved the new CONAI Articles of Association which implements the requirements of the then MATTM, including the new Article 15, paragraph 2, which stipulates: *“The Consortium adopts an accounting system that is able to highlight the cost items relating to each initiative funded with its own portion of the Environmental Contribution not allocated for ordinary running costs, in the financial statements referred to in subparagraphs 3 and 4, also with reference to the study and research activities aimed at promoting the prevention of the generation of packaging waste.”*

Revenues are divided between revenues from the environmental contribution and other revenues. The costs are divided between ordinary management costs – which include costs incurred in the performance of the characteristic functions of CONAI – other costs and costs for study and research activities to promote the prevention of packaging waste formation. This context includes initiatives aimed at consortium members to promote eco-design and design for recycling, initiatives aimed at local authorities to promote quality separate collection as a tool to reuse packaging materials by avoiding their delivery to landfill, and those aimed directly at citizens to raise awareness of environmental sustainability issues. Activities to promote research in these areas were included alongside these.

CONAI management income statement	Final 2021	Final 2020
Revenue from the environmental contribution		
Revenue from flat-rate fees for current year	16,386,674	12,369,367
Revenue from flat-rate fees for previous years	260,395	185,826
Consortia fee for CONAI operating costs	14,000,000	10,000,000
Total revenue from the environmental contribution	30,647,069	22,555,193
Other revenues		
Revenue from penalties	677,516	2,031,423
Revenue from chargeback of bioplastic costs	5,465,810	-
Revenues for the redetermination of the fee share for plastic	3,328,000	-
Miscellaneous income	734,615	859,286
Interest on assets	37,498	67,804
Revenue for reversal of the debt to MITE	1,763,490	-
Partial reversal of revenues for CONAI operating costs of 2009	(1,763,490)	-
Total Other revenues	10,243,439	2,958,513
Total revenues	40,890,508	25,513,706
Ordinary management costs		
Operating costs for governing bodies	1,249,934	1,245,599
Employee costs	5,360,060	4,873,549
Communication	963,846	595,898
Consultancy	427,931	499,500
Third-party services provided	3,978,419	3,805,659
Costs of contracted bioplastics	5,465,810	-
Costs for the redetermination of the fee share for plastic	3,328,000	-
Auditing activities	665,074	708,818
General and administrative expenses	2,168,948	2,005,610
Study centre	589,324	173,822
International activity	301,134	196,273
Third-party leasing and miscellaneous costs	472,977	624,528
Total amortisation and depreciation	992,180	918,627
Total ordinary management costs	25,963,637	15,647,883
Costs for recycling development		
Costs of managing the Anci-Conai framework agreement	3,483,030	3,078,196
Communication	1,070,499	696,599
Services provided	47,080	45,500
Membership of study activities on the circular economy	41,000	45,000
Prevention	952,551	840,034
Study centre	321,213	117,700
Environment and sustainability	158,650	148,170
Other costs for local projects	326,270	145,760
Total costs for recycling development	6,400,293	5,116,959
Other costs		
Costs for MATTM surveillance and monitoring activities	1,400,000	1.300.000
Devaluation of credits and credit losses	1,209,997	3.502.510
Regional tax on productive activities (Irap) and corporate income tax (Ires)	349,480	387.724
Total other costs	2,959,477	5.190.234
Total costs	35,323,407	25.955.076
Financial year surplus	5,567,101	(441.370)

4.1.1 Revenue area

The Consortium's total revenues, which increased by 60% compared to the previous year, consisted of revenues from environmental contributions and other income. The former include revenues on flat-rate procedures relating to declarations for the current year and those of previous years, and the ordinary environmental contribution relating to the Consortia, deducted by CONAI to finance its own business. Revenues from the environmental contribution increased by 36% due to higher revenues from the environmental contribution on flat-rate procedures and a higher coverage of CONAI operating costs. Other revenue includes revenue from penalties, miscellaneous income and financial income. These are five times higher than the previous financial year, almost exclusively due to the extraordinary accounting item relating to the amounts paid to contracting companies for 2021 compared to the costs of sorting and energy recovery/disposal of biodegradable and compostable plastic packaging waste in the plastic collection according to the ANCI-CONAI Framework Agreement of December 2021: CONAI bears the costs of this operation (5,466 thousand euros), allocates them to the Biorepack Consortium, and redetermines the Corepla Consortium's share of the environmental contribution for the year 2020 (3,328 thousand euros). A similar effect is found on the cost side with zero impact on the result for the period and the tax burden for the year.

Revenue from the environmental contribution (30,647,069 euros)

The revenue from the environmental contribution on flat-rate procedures current year (16,386,674 euros) relates to the environmental contribution declarations of simplified procedures and are presented net of the share paid to the packaging material consortia and the share refunded to the exporting consortium members.

These relate to the environmental contribution declarations:

- for imports of filled, food and non-food packaging, with which the consortium member declares an amount based on the total value of imports of packaged goods and a percentage rate;
- calculated on the weight of only the packaging of goods.

The revenues from these procedures increased by 33%, compared to the last financial year, due to both higher quantities declared (+20%) and the average change in rates (+13%).

The revenue from the environmental contribution on flat-rate procedures previous years (260,395 euros) is the result of the control activity set up and increased by 40% compared to last year.

Environmental contribution to cover CONAI's operating costs (14,000,000 euros): this distribution is regulated by Article 14, paragraph 4 of the CONAI Articles of Association and by Article 6 paragraph 1 of the CONAI Rules of Procedure, which requires that the Consortium acquires a share of the environmental contribution to carry out its operations, in compliance with the criteria of containment and efficiency of management and up to a maximum of 20% of the environmental contribution paid by consortium members. The annual share increased by 40% compared to the last financial year.

Other revenue (10,243,439 euros)

Other revenues include revenues for penalties, revenues for bioplastics chargebacks, revenues for the redetermination of the fee share for plastic, miscellaneous income and interest income.

Revenue for penalties (677,516 euros) refers to the charges applied to those consortium members who failed to submit the environmental contribution declaration or hindered the verification activity and were penalised under Article 13 of the CONAI Rules of Procedure. The amount decreased compared to the last financial year by 67% due to the different approach followed during the pandemic – advice for the main companies declaring and requesting refunds on the correctness of the procedures adopted, at their own request. It should be recalled that these revenues are recorded net of the amount deemed appropriate to address the risk associated with the possible revaluation of penalties issued for hindrance to verification activities amounting to 108,075 euros.

Revenues for the chargeback of bioplastic costs (€5,465,810): these are the revenues that are not present in the 2020 financial statements, for reversal to the BIOREPACK consortium of the costs incurred relating to the amounts paid to contracting companies for 2021 compared to the costs of sorting and energy recovery/disposal of biodegradable and compostable plastic packaging waste in the plastic collection according to the ANCI-CONAI Framework Agreement of December 2021.

The costs for the redetermination of the fee share for bioplastic (3.328.000 euro), not present in the 2020 financial statements, relate to the redetermination of the COREPLA Consortium's environmental contribution for 2020, after deducting the costs for the collection, sorting and recovery of bioplastics for the period 15.11.2020–31.12.2020, during which, pending the implementation of the billing of the environmental contribution by the new BIOREPACK consortium, COREPLA continued to collect the fee for biodegradable plastics (CONAI-BIOREPACK-COREPLA Agreement of December 2021). This revenue was then retroceded to the BIOREPACK consortium, as illustrated in the costs section.

Miscellaneous income (734,615 euros) consisted mainly of the reversal to consortium members of legal expenses for judicial debt recovery, the chargeback of a proportion of the risk fund for remodelling penalties and other revenues. These decreased by 15% due to lower revenues in previous years and proceeds of funds.

Interest earned (37,498 euros) relates to default interest accrued at the date of the financial statements on receivables for environmental contributions overdue and not yet collected as of 31 December 2021, on late payments from consortium members up to 31 December 2021 and on late submission of declarations, as well as interest accrued on CONAI's liquid funds. They were 45% lower than last year due to the lower return obtained on liquid funds.

Other revenues also include both the contingent assets (1,763,490 euros) related to the chargeback of the now time-barred debt to the MITE for the former ONR supervision and control operations for 2009 and the chargeback of the revenue (1,763,490 euros) due to the repayment to the Consortia of part of the share for the coverage of the CONAI operating costs for the year 2009, which was determined at the time, taking into account the ONR cost.

4.1.2 Costs area

The total costs of the Consortium increased by 36% compared to the previous year due to the net effect of higher costs of ordinary management and costs of recycling development and other minor costs. They include the costs of ordinary management (25,963,637 euros), recycling development costs (6,400,293 euros) and other costs (2,959,477 euros).

Ordinary management costs (25,963,637) rose by 66% and include a variety of items detailed below.

The operating costs of governing bodies (1,249,934 euros) include the running costs of the Board of Directors, the Board of Statutory Auditors and the Shareholders' Meeting. These are almost constant compared to the previous year.

Staffing costs (5,360,060 euros), compared with 2020 costs rose by 10% due to the increase in the average number of employees and salary dynamics: the mean per capita cost went up by 3%. Higher costs were also recorded for staff severance provision (TFR) and welfare schemes.

Communication costs (963,846 euros) include media activities, events, gifts, printed media and other costs of minor initiatives. These decreased by 62% due to various initiatives such as the Ecomondo trade fair.

Consultancy costs (427,931 euros) include legal, corporate and tax consultancy. These decreased by 14% due to lower costs of management consulting.

Service provision costs (3,978,419 euros) involve a variety of items, including costs for the management of the contribution fee (approximately 1,710,000 euros), costs for the management of credit recovery (approximately 1,188,000 euros) and costs for legal representation (approximately 319,000 euros). These increased by 5% due to the higher costs for the toll-free number and credit recovery activities.

Costs for contracted bioplastics (5,465,810 euros) are the costs that are not present in the last financial year and relating to the amounts paid to contracting companies for 2021 compared to the costs of sorting and energy recovery/disposal of biodegradable and compostable plastic packaging waste in the plastic collection according to the ANCI-CONAI Framework Agreement of December 2021.

Costs for the redetermination of the fee share for bioplastic (3,328,000 euros) are costs not present last year, relating to the reallocation of the BIOREPACK Consortium's environmental contribution for biodegradable and compostable plastic packaging, after deducting the costs for the collection, sorting and recovery for the period 15.11.2020–31.12.2020, during which, pending the implementation of the billing of the environmental contribution by the new BIOREPACK consortium, COREPLA continued to collect the fee for biodegradable and compostable plastics.

Auditing costs (665,074 euros) include costs for auditing carried out by third-party organizations with consortium members for the correct application of the environmental contribution. These decreased by 6% due to lower number of audits carried out.

General and administrative costs (2,168,948 euros) include costs for insurance, stationery, certification of financial statements, Supervisory Board, software and hardware maintenance fees, connectivity, restaurant vouchers, utilities, employee travel expenses, and increased by 8% from the previous year due to higher costs for employee travel expenses, staff training and research, and software and hardware maintenance fees.

Study centre (589,324 euros): are up (approximately +415,000 euro), in line with the study and research programme, and include studies on the packaging sector and the validation of the procedures for determining packaging put on the market, recycling and recovery data (Recycling Objectives approximately 88,000 euros), the study on packaging consumption (approximately 42,000 euros) and the forecast on the amount of packaging put on the market (65,000 euros), and other new initiatives not present last year, such as “Waste Sector Regulation” (180,000 euros) and “Monitoring economic and operational data of Consortia and self-compliance EPR organizations (214,000 euros).

International activity (301,134 euros): includes the EXPRA membership fee and other costs. It is up by 53% due to the launch of new activities: the international study on packaging management models, and the study on the opportunity to implement the DSR (Deposit Return System) for the collection of packaging waste in Italy.

Leasing and miscellaneous management expenses (472,977 euros) include operating leases and rentals (approximately 244,000 euros) and miscellaneous management expenses (approximately 229,000 euros) for the costs of previous years, expenses for sanitising offices and the purchase of personal protective equipment to ensure the safety of employees due to the ongoing pandemic, and for various taxes and duties.

Depreciation (992,180 euros) consist mainly of the depreciation of the Consortium head office located in Milan and the purchase of licences and software used in Consortium operations.

Recycling development costs (6,400,293 euros) include the costs relating to a variety of initiatives, which are detailed below.

The costs of management of the ANCI-CONAI Framework Agreement (3,483,030 euros) include the costs of the ANCI-CONAI local communication Call (approximately 1,089,000 euros), the costs of local projects (approximately 895,000 euros) related to supporting local authorities for integrated management projects for new separate collection systems, the costs for the management of the National Observatory (200,000 euros), of the database (200,000 euros) and the ANCI technical structure (400,000 euros), the costs of the Coordination and Auditing Committees (148,000 euros) and other costs. These increased by 13% due to the costs for the ANCI technical facility that were not present last year.

Communication costs (1,070,499 euros) include initiatives aimed at citizens and companies for recycling development. These include activities linked to the “25 years of Conai” (approximately 147,000 euros), the “Beyond Appearances and the BIO bag” campaign (approximately 218,000 euros), social media communication activities (approximately 223,000 euros), the initiatives on Italy’s Economy (approximately 70,000 euros), Radio 24 (approximately 79,000 euros), Economy of the Future (approximately 50,000 euros), the Webinar Weeks (approximately 84,000 euros) and the Pianeta 2020 Project (approximately 50,000 euros). These increased by 53% due to the costs for the “25 years of CONAI” initiative and the “Beyond Appearances and the BIO bag” campaign that were not present last year.

Third-party service costs (47,080 euros) include the costs relating to the fee modulation.

Membership of study activities on the circular economy (41,000 euros): includes membership fees to third-party organizations that carry out research on the circular economy.

Company prevention and ecosustainability (952,551 euros): costs include the various initiatives including the Prevention Call aimed at companies that design, produce and use ecosustainable packaging (approximately 501,000 euros), the updating of the “CONAI Eco Tool for the Call” (approximately 263,000 euros) which enables member companies to carry out a simplified LCA analysis and measure the usefulness of their interventions on prevention and the “Tools and Guidelines for Companies and Associations” initiative on packaging labelling (approximately 130,000 euros). These increased by 13% due to the higher costs of the latter two initiatives.

Study centre (321,213 euros): includes the costs of the Recycling Industry Observatory and information on sales and other new initiatives; they are up by 73% as a result of these.

Environment and sustainability (158,650 euros) includes the costs of the sustainability report, consultancy on European funding and the environmental Meter and rose by 7%.

Other costs for local projects (326,270 euros) relate to the costs of local training events held aimed at companies on aspects of prevention and exemptions on packaging management and other initiatives.

The other costs include **costs for the waste supervision and control activities performed by the MiTE** (1,400,000 euros), **devaluation and losses on receivables for penalties and the fee** (1,209,997 euros), a decrease due to lower penalties applied during the year and the different stratification of yearly credit **and taxes** (349,480 euros).

4.2 Management income statement for the EPR organization

Management income statement for the EPR organization	Final 31.12.2021	Final 31.12.2020
Values in thousands of euros		
REVENUES		
From the CONAI Environmental Contribution	1,167,827	1,005,601
Material sales - Delivery services	474,887	179,983
Other revenues	43,072	46,558
TOTAL REVENUES	1,685,786	1,232,142
COSTS		
Delivery costs	(742,681)	(666,098)
Recycling costs	(373,067)	(331,599)
Energy recovery costs	(71,826)	(120,334)
Operating costs	(80,829)	(94,975)
TOTAL COSTS	(1,268,403)	(1,213,006)
Financial, extraordinary and tax management	(17,818)	9,279
Financial year surplus/(deficit)	399,565	28,415
Capital reserve	514,558	114,993

The year 2021 closed with a positive result that was a clear improvement over the previous year and brought the CONAI EPR organization's reserves for the year-end to 515 million euros, or 41% of the total costs for the year.

Total revenues consist of revenues from the environmental contribution, revenues from the sale of materials, and other revenues for a total of 1,685,786 thousand, up 37% from the previous year.

Revenue from the contribution (1,167,827 thousand euros) increased by 162,226 thousand euros and equals 69% of total revenues. The increase is attributable to the launch of the Biorepack consortium, the biodegradable and compostable plastics consortium, whose ordinary annual environmental contribution amounts to 30,928 thousand euros, and to the effect of the increases, from 1 January 2021, in the following environmental contributions: steel supply chain (+8,225 thousand euros), whose contribution changed from € 3/tonne to € 18/tonne, the plastics supply chain (+84,004 thousand euros), whose average contribution changed from € 330/tonne to €393/tonne, and the glass supply chain (+31,538 thousand

euros), whose contribution changed from an average annual value of € 29/tonne to € 37/tonne. The contribution of the paper supply chain instead decreased from an average annual contribution of 46.67 €/tonne to an average annual contribution of € 40/tonne with a total decrease of 13,913 thousand euros. Total declared quantities went up by approximately 10%. Revenue from the sale of materials (474,887 thousand euros) increased by 294,904 thousand euros and equals 28% of total revenues. This trend is mainly due to the increase in the sale prices of second raw materials, an increase that affected the majority of consortia. The steel supply chain recorded higher revenues of 5,494 thousand euros (+34%) and the aluminium supply chain recorded higher revenues of 3,296 thousand euros (+50%). Revenues from pulping in the paper supply chain almost quadrupled (+197,776 thousand euros) while those from plastics almost doubled (+71,948 thousand euros). Sales revenues from the glass supply chain more than doubled (+12,305 thousand euros) due to both prices and higher quantities sold.

Total costs consist of delivery, recycling and energy recovery costs as well as the facility operating costs, for a total of 1,268,403 thousand, up 5% from the previous year.

The costs of delivery (742,681 thousand euros, equal to 59% of total costs) increased by 76,583 thousand euros due to the larger amounts disposed of (+3%) and the higher unit costs (+8%). The paper supply chain recorded higher costs (+ 69,884 thousand euros) due to both higher quantities delivered (+8%) and higher unit costs. The glass sector also recorded higher costs (+14,544 thousand euros) mainly due to higher unit costs (+16%). On the other hand, the costs of both the steel supply chain (-4,823 thousand euros) and the costs of the plastic supply chain (-15,552 thousand euros) went down due to the lower quantities managed. The costs of the compostable and biodegradable plastics supply chain are also present unlike last year, at 9,193 thousand euros. Delivery costs include ANCI-CONAI fees paid to municipalities, of 727,476 thousand euros, equal to 98% of total disposal costs.

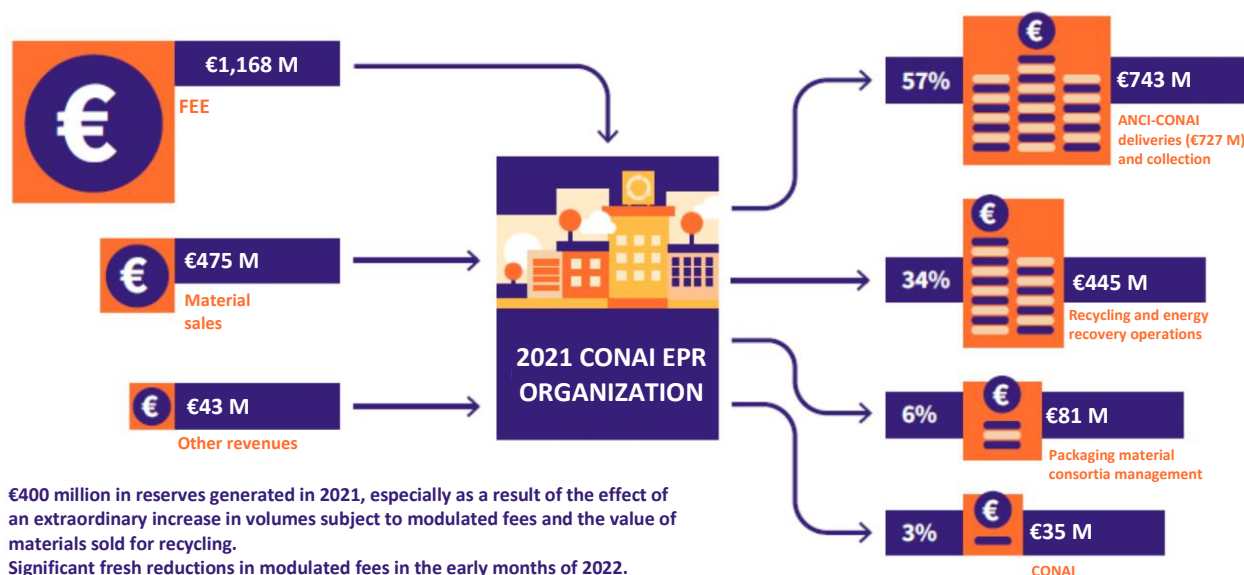
Recycling costs (373,067 thousand euros, or 29% of total costs) increased by 41,468 thousand due to higher costs for disposal of extraneous fractions (+19,498 thousand euros), higher recycling contributions (+10,368 thousand euros) and higher costs of logistics (+3,119 thousand euros) and sorting (+7,565 thousand euros). The greater number of deviations was attributable to the paper supply chain (+12,412 thousand euros) and the plastics supply chain (21,157 thousand euros).

The costs of energy recovery (71,826 thousand euros, equal to 6% of total costs) almost halved as a result of the lower quantities sent for energy recovery.

The costs of running the facility (80,829 thousand euros, 6% of total costs) include general, communication, staffing, research and development, local projects, and depreciation and devaluations, and decreased by 14,146 thousand euros, mainly due to lower accruals, partly compensated by higher communication and general costs. Staffing costs, coming under this group of items, came to 19,181 thousand euros and was equivalent to just 1.5% of total costs. The group of items “financial, extraordinary and tax management” made a negative contribution of 17,818 thousand euros to the result for the year, mainly attributable to higher taxes.

92% of revenues from environmental contributions, 37% of revenues from the sale of materials, and 3% of other revenues covered the costs necessary to ensure the operation of the system. Total revenues were therefore sufficient not only to ensure costs were covered, but generated an overall surplus, net of the financial management costs extraordinary costs and taxes, equal to 32% of total costs. It should be recalled that following the positive results for 2021 and the trend in prices of second raw materials in the first few months of 2022, the CONAI Board of Directors decided to reduce the contribution of steel, aluminium, paper, plastic and glass with effect from 1 July 2022. (see below).

ORGANIZATION ECONOMIC RESULTS



Appendix Final General Report 2021

Circulars on reusable packaging - summary of current facilitated procedures

<p>Circulars 5 April and 2 July 2012</p>	<p>Facilitated formulas reserved for reusable packaging used within particular circuits</p>	<p>Reusable packaging used within a productive cycle of commercial network (not subject to fee) – circ. 5.04.2012 – lett. a)</p> <p>Exemption from the environmental contribution for reusable packaging used as part of a production cycle or commercial and in particular, to move products within companies and not to contain goods intended for sale.</p> <p>This is reusable packaging, which is structurally designed generally for use for multiple years (according to the most frequent cases found: plastic crates of various sizes and wooden or plastic pallets) used for the handling of goods (from raw materials to finished products) within the same industrial facility or logistics depots (belonging to the same legal entity) or between several local sites (production sites, logistics depots, sales outlets) belonging to the same legal entity or industrial or commercial group/network).</p> <p>Reusable packaging used in particularly environmentally virtuous circuits (subject to fee at packaging end of life – circ. 5.04.2012 – lett. b) and circ. 2.07.2012 – point 2.</p> <p>For reusable packaging used in duly controlled, certified/verifiable return systems (rental-type or similar commercial forms with transfer of property without ownership).</p> <p>The procedure involves:</p> <ul style="list-style-type: none"> – the application of the environmental contribution at the time when packaging, part of the entire pool in circulation, actually ends its cycle of reuse or is in any case dispersed or outside of the circuit. It follows that the owner of the reusable packaging does not have to pay the environmental contribution at the time of placement on the market, but commits to declare it and pay it directly to CONAI when the packaging has finished its cycle of reuse; – the declaration and payment of the contribution shall also include packaging that is disposed of or recycled at the owner’s own expense, if the owner is unable to
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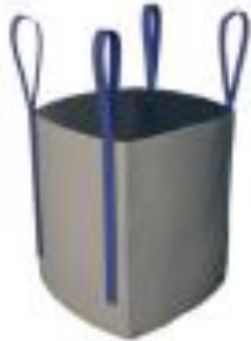
		<p>appropriately document the use of the raw material (obtained from the recycling of the packaging) for the production of other packaging placed back on the same circuit.</p> <p>Reusable glass bottles and plastic crates/baskets used in particularly environmentally virtuous circuits (reduction of the weight subject to fee compared to the ordinary procedure –circ. 2.07.2012 – point 1.</p> <ul style="list-style-type: none"> – for glass bottles: percentage subject to fee: 15% (85% reduction in weight); – for plastic crates/baskets: percentage subject to fee: 7% (93% reduction in weight); 																																																						
<p>Circular of 31 March 2022 (supplementing and replacing Circular 2 of December 2021, 14 June 2019 and 10 December 2012).</p>	<p>Application of the CONAI Environmental contribution on wooden pallets, with reference to:</p> <ul style="list-style-type: none"> – Used, repaired or simply sorted wooden pallets; – Wooden pallets if produced according to specifications as coded within controlled circuits. 	<p>a. Used, repaired or simply sorted wooden pallets;</p> <p>On these types of pallets - there are different facilitate formulas for operators in the sector, as detailed in the circular and summarised in the following table:</p> <table border="1" data-bbox="603 1055 1447 1218"> <thead> <tr> <th>CASES</th> <th>From 2013 to 2018</th> <th>From 2019 to 2021</th> <th>From 1.1.2022</th> </tr> </thead> <tbody> <tr> <td rowspan="3"><i>CASE 1:</i> irrespective of the activity actually performed on them (repair - on all or part of them -, mere sorting or no activity at all) as well as of their origin (i.e. with form or transport document)</td> <td colspan="3" style="text-align: center;">Percentage of weight to be subject to fee</td> </tr> <tr> <td style="text-align: center;">60%</td> <td style="text-align: center;">60%</td> <td style="text-align: center;">60%</td> </tr> <tr> <td colspan="3" style="text-align: center;">Percentage of weight reduction</td> </tr> <tr> <td></td> <td style="text-align: center;">40%</td> <td style="text-align: center;">40%</td> <td style="text-align: center;">40%</td> </tr> </tbody> </table> <table border="1" data-bbox="603 1256 1447 1368"> <thead> <tr> <th>CASES</th> <th>From 2013 to 2018</th> <th>From 2019 to 2021</th> <th>From 1.1.2022</th> </tr> </thead> <tbody> <tr> <td rowspan="3"><i>CASE 2:</i> if produced according to specifications as coded within known "controlled" production circuits for which certain requirements exist (*)</td> <td colspan="3" style="text-align: center;">Percentage of weight to be subject to fee</td> </tr> <tr> <td style="text-align: center;">40%</td> <td style="text-align: center;">20%</td> <td style="text-align: center;">10%</td> </tr> <tr> <td colspan="3" style="text-align: center;">Percentage of weight reduction</td> </tr> <tr> <td></td> <td style="text-align: center;">60%</td> <td style="text-align: center;">80%</td> <td style="text-align: center;">90%</td> </tr> </tbody> </table> <p>b. Wooden pallets if produced according to specifications as coded within controlled circuits.</p> <p>For the pallets referred to in CASE 2 above but newly manufactured, similar facilities are provided, as summarised in the table below:</p> <table border="1" data-bbox="603 1727 1447 1883"> <thead> <tr> <th>CASES</th> <th>From 2013 to 2018</th> <th>From 2019 to 2021</th> <th>From 1.1.2022</th> </tr> </thead> <tbody> <tr> <td rowspan="3">if produced according to specifications as coded within known and validated "controlled" production circuits for which certain requirements exist (*)</td> <td colspan="3" style="text-align: center;">Percentage of weight to be subject to fee</td> </tr> <tr> <td style="text-align: center;">40%</td> <td style="text-align: center;">20%</td> <td style="text-align: center;">10%</td> </tr> <tr> <td colspan="3" style="text-align: center;">Percentage of weight reduction</td> </tr> <tr> <td></td> <td style="text-align: center;">60%</td> <td style="text-align: center;">80%</td> <td style="text-align: center;">90%</td> </tr> </tbody> </table>	CASES	From 2013 to 2018	From 2019 to 2021	From 1.1.2022	<i>CASE 1:</i> irrespective of the activity actually performed on them (repair - on all or part of them -, mere sorting or no activity at all) as well as of their origin (i.e. with form or transport document)	Percentage of weight to be subject to fee			60%	60%	60%	Percentage of weight reduction				40%	40%	40%	CASES	From 2013 to 2018	From 2019 to 2021	From 1.1.2022	<i>CASE 2:</i> if produced according to specifications as coded within known "controlled" production circuits for which certain requirements exist (*)	Percentage of weight to be subject to fee			40%	20%	10%	Percentage of weight reduction				60%	80%	90%	CASES	From 2013 to 2018	From 2019 to 2021	From 1.1.2022	if produced according to specifications as coded within known and validated "controlled" production circuits for which certain requirements exist (*)	Percentage of weight to be subject to fee			40%	20%	10%	Percentage of weight reduction				60%	80%	90%
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		<p>(*) Minimum requirements, essential for access to the facility, valid for both new and used pallets (further details in the circular):</p> <ul style="list-style-type: none"> – The establishment of a monitored system of prevention and reuse, managed by a party that is specially identified and recognised by CONAI and RILEGNO, which ensures and takes charge of the functioning of the system itself; – The aforementioned system and its management undergo coordinated control by CONAI and RILEGNO as well as an independent third-party organization; – Express membership of the system by consortium member operators in the sector who demonstrate that they possess the requisites; – Observation of defined specifications, specifically validated by CONAI and RILEGNO, that identify characteristics of pallets (e.g. dimensions, capacity, identifying elements such as brand, clips, studs or irremovable labels). <p>From 1/1/2022, a new simplified formula for applying the environmental contribution was introduced, reserved for operators in the sector of repair of wooden pallets conforming to codified specifications, owned by third parties (paragraph c., point 4 of the circular).</p>
Circular of 19 March 2014, as amended	Regenerated steel drums	<p>Simplified procedure for the application and declaration of the environmental contribution reserved for steel drum regenerators</p> <p>This procedure, which is an alternative to the ordinary one, provides for the possibility of applying a unit environmental contribution on the number of steel drums regenerated, subject to “First transfer”, determined on the basis of a standard weight attributed to the drum.</p>
Circular of 22 December 2014	Refillable gas cylinders of various types (excluding fire extinguishers)	<p>Exclusion of the environmental contribution on refillable gas cylinders of various types (excluding fire extinguishers)</p> <p>Transportable, refillable and reusable containers and their accessories (such as valves and protective caps), intended for the containment of compressed, liquefied and dissolved</p>

		gases, with specific reference to technical, special and medical gases, liquefied petroleum gas (LPG) and natural gas, are exempt from the CONAI environmental contribution, without prejudice to their nature as packaging.
Circular of 5 December 2017, as amended	Multi-material tanks and plastic drums regenerated and put back on the domestic market	<p>Simplified procedure for the application, declaration, exemption and payment of the environmental contribution reserved for regenerators of multi-material tanks and plastic drums regenerated and put back on the market</p> <p>This procedure, which is an alternative to the ordinary one, provides for the possibility of applying the environmental contribution on the number of packaging items regenerated, determined on the basis of a standard weight attributed to the packaging.</p>

Lists of plastic packaging in the contribution levels 2022

LEVEL A1 – Rigid and flexible packaging with an effective and consolidated industrial sorting and recycling chain, mainly managed in the C&I circuit.



Big Bags and similar fabric Bags for industrial use



Water dispensers bottles and their caps



Crates and industrial/agricultural Boxes/Large Boxes, including those indicated in the Conai Circular of 02/07/2012, in unexpanded material¹

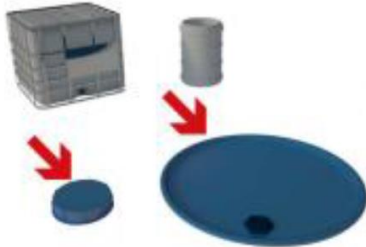


Bottle baskets, including those indicated in the Conai Circular of 02/07/2012

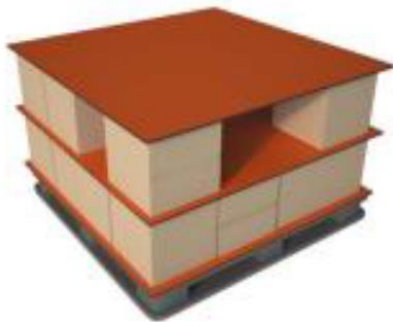
¹ For such types of packaging, the declaration forms (available online at [dichiarazioni online](https://www.dichiarazioni.conai.it/), subject to registration and authentication) has been supplemented with additional and specific detail items. This information is essential and relevant in order to fulfil certain regulatory obligations also connected to the simultaneous operation on the market of other parties responsible for the management of packaging waste of the same type.



HDPE Drums and IBC Tanks with capacity of 30 litres or more



Caps, closures and lids for drums and IBC tanks



Interlayers



Pallets

In force as of 1.1.2022



Rolls, tubes and cylinders around which flexible material is wound already subject to Contribution, as per Conai Circular of 27/06/2013, for industrial use



Cans - over 5 litre capacity

Raw materials for self-production of the packaging indicated above also fall into Level A1.

In force as of 1.1.2022

LEVEL A2 – Flexible packaging with an effective and consolidated industrial sorting and recycling chain, mainly from the C&I circuit but with a significant presence in municipal separate waste collection:



Liners, bags for industrial use, caps to cover pallets/Big Bags, film for palletising, shrink film for wrapping, bubble wrap, and other air cushions - made of monopolymer, unexpanded and non-metallic/metal-painted PE. PE foam structures are tolerated up to a thickness of 2mm

Raw materials for self-production of the packaging indicated above also fall into Level A2.

In force as of 1.1.2022

LEVEL B1 – Packaging with an effective and consolidated sorting and recycling chain, mainly from the household circuit²



PET bottles, jars and detergent bottles - monopolymer, clear or coloured clear, without a covering label (sleeve) direct printing (instead of the label) - and preforms for production of the them³



PET bottles, jars and detergent bottles - monopolymer, clear or coloured clear, with a covering label (sleeve) in plastic and with perforations/punching to facilitate removal and accompanied by instructions for the consumer on to do so - and preforms for production of them³



HDPE bottles, detergent bottles and the like, cans and other rigid containers - up to 5 litres capacity - with colour other than black, without covering label and without mineral fillers. Mineral fillers are tolerated provided that the density remains below 1 g/cm³ (grammes/cubic centimetre).



HDPE bottles, detergent bottles and the like, cans and other rigid containers - up to 5 litres capacity - with colour other than black and with covering label but with perforations/punching to facilitate removal and accompanied by instructions that invite the consumer to proceed in this sense and without mineral fillers. Mineral fillers are tolerated provided that the density remains below 1 g/cm³ (grammes/cubic centimetre).

Raw materials for self-production of the packaging indicated above also fall into Level B1³.

² Consistent with the implementation of EU Directive 2019/904, also known as the SUP (Single Use Plastic) Directive, plastic caps designed to remain integral to plastic beverage containers of up to 3 litres during the useful life of the packaging will be moved from Level B2 to Level B1 and declared in this level under a specific item. The effective date of this move is subject to compliance with the requirements of the EN technical standard that is still to be determined.

³ For such types of packaging, the declaration forms (available online at [dichiarazioni.online](https://www.dichiarazioni.online), subject to registration and authentication) has been supplemented with additional and specific detail items (based on transparency/opacity, colour, capacity and/or the presence of a removable covering label). This information is essential and relevant in order to fulfil certain regulatory obligations also connected to the simultaneous operation on the market of other parties responsible for the management of packaging waste of the same type.

LEVEL B2 – Other sortable / recyclable packaging from the household and/or the C&I circuit

Packaging with different levels of sortability and recyclability merged for simplification into one single category;



Reusable bags, compliant with current legislation (Art. 226-bis of Legislative Decree 152/2006) ⁴



Mechanical dispensers (e.g. spray pumps, triggers, etc.)



Hard caps, closures, and lids other than those in Level A

Recyclable packaging recently placed on the market



HDPE bottles, detergent bottles and the like, cans and other rigid containers – up to 5 litres capacity – with sortable black colouring agent and without mineral fillers. Mineral fillers are tolerated provided that the density remains below 1 g/cm³ (grams/cubic centimetre)

⁴ The exclusion of reusable bags, so-called cabas, conforming the provisions of current legislation (with external handles, thickness greater than 200 microns and containing at least 30% of recycled material) from the Environmental Contribution is confirmed.

Packaging for which recycling is costly, and/or from which lower quality second raw materials are obtained



Labels - covering labels (sleeves) or non-covering labels - not glued - in monopolymer PE, monopolymer PP or multilayer PE/PP, without mineral fillers, not black in colour and non-metallic/painted with metals, with perforations/punching to facilitate removal and accompanied by instructions that for the consumer on to do so. Mineral fillers are tolerated provided that the density remains below 1 g/cm³ (grammes/cubic centimetre).



Non-metallic/metal-painted monopolymer PE flexible packaging, without mineral fillers, with colour other than black - other than that in Levels A1 and A2. PE foam and mineral filler structures are tolerated provided that the density remains below 1 g/cm³ (grammes/cubic centimetre) as well as inner layers to provide and additional barrier made of EVOH with a limit of 5% of the total packaging weight. (e.g. film for clothing, film for professional use, protective film, range IV bags, etc.)



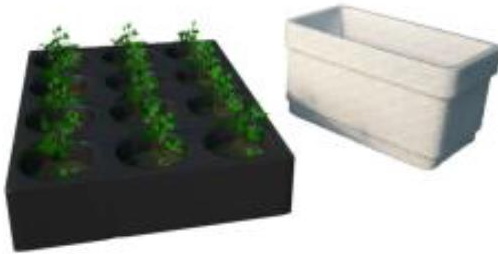
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In force as of 1.1.2022



Rigid packaging in monopolymer PP or monopolymer PE, in a colour other than black, without mineral fillers, other than that of Levels A1, B1 and C. PE foam structures and mineral fillers are tolerated provided that the density remains below 1 g/cm³ (grammes/cubic centimetre). Any covering labels, whether or not perforated/punched, are also tolerated.
(e.g. bottles, buckets, containers, trays, jars, etc.)

Packaging with a recycling chain that is being consolidated and developed



Seed trays and food crates in foam PS (EPS) intended for the C&I circuit

Raw materials for self-production of the packaging indicated above also fall into Level B2.

In force as of 1.1.2022

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

All types of packaging not present in the previous lists must be considered to belong to Level C and, therefore, the illustrations shown next to each macro item (rigid packaging, flexible packaging or poly laminated packaging mainly in plastic) are to be considered by way of example and not limited to.

RIGID PACKAGING⁵



Opaque PET bottles, jars and detergent bottles and the like and preforms for production of the same



Bottles, jars, detergent bottles and the like, cans and other rigid containers with covering label (so-called sleeve) in plastic and preforms for production of the same, other than those in Level B1 and B2



PET bottles, jars and detergent bottles and the like - multilayer with polymers other than PET- and preforms for production of the same

⁵ For such types of packaging, the declaration forms (available online at [dichiarazioni online](https://www.dichiarazioni.gov.it/), subject to registration and authentication) has been supplemented with additional and specific detail items (based on transparency/opacity, colour, capacity and/or the presence of a removable covering label). This information is essential and relevant in order to fulfil certain regulatory obligations also connected to the simultaneous operation on the market of other parties responsible for the management of packaging waste of the same type.

In force as of 1.1.2022



PET bottles, jars and detergent bottles and the like with direct printing on the same (instead of the label) and preforms for production of the same



Bottles, jars, detergent bottles and the like, cans and other rigid containers made with polymers other than PET and PE (e.g. PS, PLA, PVC, PETG, etc.) and preforms for production of the same



Black, non-sortable bottles, detergent bottles and the like, cans and other rigid containers - up to 5 litres capacity - and preforms for production of the same

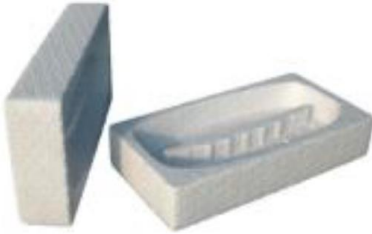


Bottles, jars and detergent bottles and the like with glued or welded metal components and preforms for production of the same

In force as of 1.1.2022



Emptied beverage system capsules (Conai Circular of 07/10/2014)



Crates in foam material other than those in Level B2

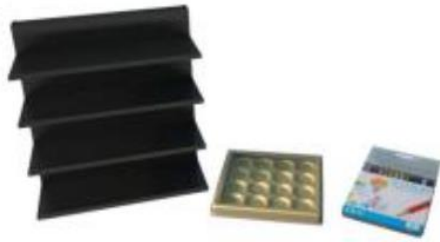


Protective elements in foam or rigid material, regardless of polymers, other than those in Level B2



Hangers for clothes, linen and other goods (Conai Circular of 7/10/2013), with different characteristics from those provided for rigid packaging in Level B2

In force as of 1.1.2022



Display packaging (e.g. displays, blisters, thermoforms and plaques), with different characteristics than those provided for rigid packaging in Level B2



Strapping and bands for packaging use of any shape, polymer, or size



Rolls, tubes and cylinders around which flexible material is wound (Conai Circular of 27/06/2013), other than those for industrial use in Level A



Disposable plates and cups, with different characteristics than those provided for rigid packaging in Level B2



Tubes

In force as of 1.1.2022



Containers in extruded foam (e.g. XPS)



All other rigid packaging with different characteristics than those provided for rigid packaging in Level A1 and Level B2

In force as of 1.1.2022

FLEXIBLE PACKAGING



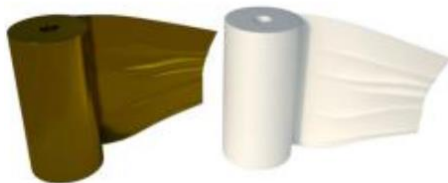
Shopping bags, bags and small bags other than those of Levels A1, A2 and B2



Woven/non-woven garment covers and linen bags with characteristics different from those envisaged for the flexible packaging of Level B2



Labels - covering and non-covering - with different characteristics than those provided for Level B2 labels



Flexible packaging intended for the C&I circuit with different characteristics than those provided for flexible packaging in Level A (not in PE and/or metallic/painted with metals)



Adhesive tapes



Net and string bags and twine and their relative bands/straps (e.g. for fruit and vegetables), of any shape, polymer or size



All other flexible packaging intended for the household circuit with different characteristics from those provided for flexible packaging in Level B2 (not in PE and/or non-PP and/or black and/or metallic/painted with metals and/or with internal layers to provide a better barrier made from EVOH above 5% of the total weight of the packaging)

In force as of 1.1.2022

PLASTIC-BASED POLYLAMINATE PACKAGING



Poly laminates mainly in plastic material of any shape or size

Any other packaging intended for the C&I and/or household circuit (and related raw materials for self-production)⁶ not expressly included in the lists of Level A1, A2, B1 and/or B2, falls into Level C.

⁶ For such types of packaging, the declaration forms (available online at [dichiarazioni online](#), subject to registration and authentication) has been supplemented with additional and specific detail items (based on transparency/opacity, colour, capacity and/or the presence of a removable covering label). This information is essential and relevant in order to fulfil certain regulatory obligations also connected to the simultaneous operation on the market of other parties responsible for the management of packaging waste of the same type.

In force as of 1.1.2022

Declaration of verification of the procedure for operation of the CONAI Eco Tool and of selection of the cases admitted and not admitted for the CONAI prevention call - 2021 edition



CONAI - National Packaging Consortium

Declaration of verification of the procedure for operation of the CONAI Eco Tool and method for selecting the cases admitted and not admitted for the "CONAI call for the eco-design of packaging in the circular economy" - 2021 edition

INTRODUCTION

Prevention is one of the main activities with which CONAI plays a role in supporting companies, pursuant to Legislative Decree 152/2006 as amended, both to foster and spread a culture of environmental sustainability, and to enhance interventions for the design and production of packaging with a reduced environmental impact, involving all stages of the life cycle.

One of the tools that has been used for this purpose since 2013 is the call for tenders for the prevention and enhancement of the environmental sustainability of packaging, which collects and rewards sustainable solutions for packaging put on the market by enhancing its innovative content that is beneficial to the environment, as indicated in the participation rules.

This year CONAI has focused its attention on the issue of eco-design also in view of the approval of the package of EU directives on the circular economy, aimed at optimising the efficient use of resources and the closure of production cycles.

In this context, CONAI requested DNV to verify the correct application of the Regulations for the "CONAI CALL FOR THE ECO-DESIGN OF PACKAGING IN THE CIRCULAR ECONOMY – Enhancing the environmental sustainability of packaging – 2021 edition" of 25 February 2021 ("2021 Eco-design Call Regulations") of the "Bando CONAI per l'eco-design" guidelines and the correct functioning of the "CONAI Eco Tool" used for the selection and evaluation of the cases submitted by consortium members with the assignment of scores and the relative prizes.

SCOPE OF THE ACTIVITIES AND METHOD

The objective of the audit, shared and agreed upon with CONAI, was to analyse the procedures used by the Consortium for the application of the "2020 Eco-design Call Regulations" and thus the means for selecting and evaluating the cases submitted by consortium members and for awarding the relative scores and prizes. The activity took place remotely using the WEBEX platform, due to the ongoing Covid-19 (SARS-CoV-2) pandemic, in October and November 2020, through a review of documents and an "operational" one.

During the operational stage, a representative sample (30 out of 291, or 10.3%) of cases submitted by 30.06.2020 by consortia members who had joined the "CONAI CALL FOR THE ECO-DESIGN OF PACKAGING IN THE CIRCULAR ECONOMY – Enhancing the environmental sustainability of packaging – 2020 edition" was examined, as illustrated in the table below:

Selected cases submitted from consortium members	Total cases	Cases sampled in terms of absolute value	% Cases sampled
Cases admitted and awarded prizes (including 4 super prizes)	166	17	10.2%
Cases not admitted and not awarded prizes	125	13	10.4%
TOTAL	291	30	10.3%

As set out in the "2020 Eco-design Call Regulations" of 19 February 2020, the work carried out was based on the verification of the "Bando CONAI per l'eco-design" guidelines, version 02.01 of 19/10/2020 and of the correct functioning of the "CONAI Eco Tool" webtool for the:

- correct selection of cases "not admitted" compared with those "admitted";
- correct selection of cases "admitted" compared with those "not admitted";
- Correct assignment of the score and the allocation of the relative prizes, included the four super prizes, for the "admitted" cases.

In relation to the validation of the "CONAI Eco Tool" webtool, the Consortium verified its effective functioning through the supplier Life Cycle Engineering Srl (LCE) that developed it and manages its upgrades.

The version of the "CONAI CALL FOR THE ECO-DESIGN OF PACKAGING IN THE CIRCULAR ECONOMY – Enhancing the environmental sustainability of packaging – 2020 edition" used was version 3.0 of 03.05.2017, the validation of which was issued with the "General licence for webtool usage" rev. 1 of 03.05.2017.

The latest upgrade involved the development of a new section dedicated to the analysis of reusable packaging and the updating of the existing tool, as shown in the document "Receipt of CONAI Eco Tool Delivery Kit version 3.0 of 03.05.2017. Any bugs were reported to LCE by CONAI by recording in the document Mod. 21 "CONAI Eco Tool Reports".

CONCLUSIONS

The Assessment allowed us to appreciate the commitment of the team operating in the "Study Centre/Prevention Area" division in promoting strategies that were highly oriented towards encouraging its consortium members to develop circular economy processes and, in the case examined, eco-design over the entire life cycle of packaging, given that this process, in addition to fostering and spreading a culture of environmental sustainability, is a distinguishing element for competitive advantage.

The activities carried out show that the Regulations for the "CONAI CALL FOR THE ECO-DESIGN OF PACKAGING IN THE CIRCULAR ECONOMY – Enhancing the environmental sustainability of packaging – 2020 edition" of 19 February 2020 are a structured and effective tool for the sharing among consortium members of a culture of environmental sustainability and the exploitation of design, eco-design and production of packaging with reduced environmental impact.

The information, data, related analyses and results of the selection and evaluation of the randomly audited cases for the awarding of the prizes and the four super prizes were correctly managed, documented and consistent with the guidance in the "2020 Eco-design Call Regulations" of 19 February 2020, the "Bando CONAI per l'eco-design" guidelines version 02.01 of 19/10/2020 and in the "CONAI Eco Tool – Technical Manual (LCE) Version V02 of 21.10.2020. They are appropriately archived to ensure traceability.

Details of the recommendations and opportunities for improvement that were found during the audit and their progress are provided in the "List of Findings" document annexed to the Assessment Report Rev.1 of 09.11.2020.

Based on the auditing activities carried out, CONAI may use the wording "Verified by DNV GL" on its website www.ecotoolconai.org, in the information documented in paper format and in institutional information posted on the websites.

On websites where this wording is used, a hyperlink to the "Declaration of Verification" must be provided in order to make the scope of application and outcome of the audit public and transparent.

Any communication and/or publication by CONAI bearing the statement 'Verified by DNV GL' must first undergo approval by DNV GL.

DECLARATION OF INDEPENDENCE

DNV GL was not involved in the preparation of some documents, the collection of and interpretation of data and the findings in the "CONAI CALL FOR THE ECO-DESIGN OF PACKAGING IN THE CIRCULAR ECONOMY – Enhancing the environmental sustainability of packaging – 2020 edition" of 19 February 2020 and in the associated ranking. DNV GL therefore maintains complete impartiality with regard to the contracting party, the auditing and the parties who created the "CONAI Eco Tool" version 3.0 webtool.

DNV GL accepts no liability or joint responsibility for any decision made based on this Declaration of Verification.


Vimercate, 11 November 2020

On behalf of DNV GL Business Assurance Italia S.r.l.

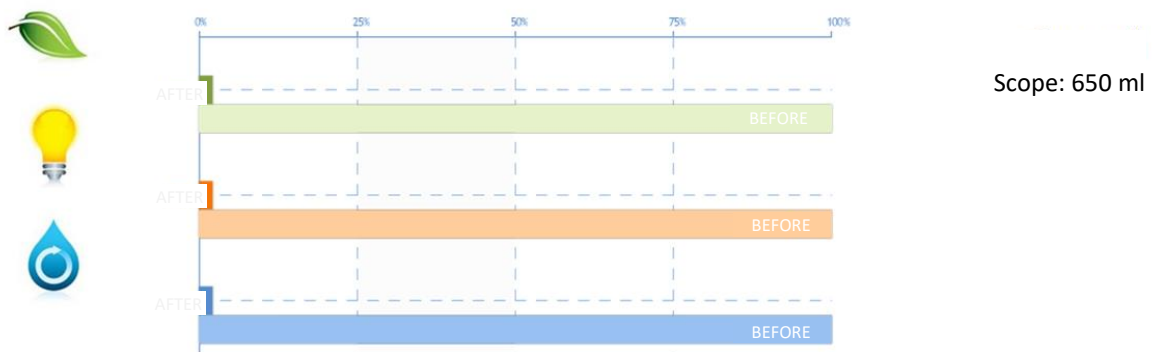
Riccardo Arena
Lead Verifier
[signature]

Alessia Segalini
Reviewer
[signature]

Forms for CONAI prevention call 2021

	<p>Industrial adhesives for composite materials in reusable Eucyl canisters</p> <p>DUERF SRLS</p> <p>DUERF SRLS/Industrial adhesives for composite materials in reusable Eucyl canisters/2020</p> <p>OTHER SECTORS</p> <p>Steel</p> <p>Industrial adhesives for composite materials (e.g. wind turbine blades, boat hulls, car bodies), in the version prior to intervention, were contained in tinsplate spray cans, which were handled as special industrial waste after use. In 2020 Duerf introduced the Eucyl spray canister which, through special valves, allows 10 years of reuse. At the end of use, the company takes care of collecting the empty cylinder, cleaning and refilling it. The company has developed a system for both cleaning and restoring cylinders and for recovering product residues that are reused in production.</p>
<p>Prevention Drivers</p> <p>Re-use</p>	

SIMPLIFIED LCA ANALYSIS RESULTS



Source: CONAI Eco Tool



Meat in jelly 90 g tin - Simmenthal

BOLTON FOOD S.P.A.

BOLTON FOOD S.P.A./Meat in jelly 90 g tin - Simmenthal/2020

SOLID FOODSTUFFS

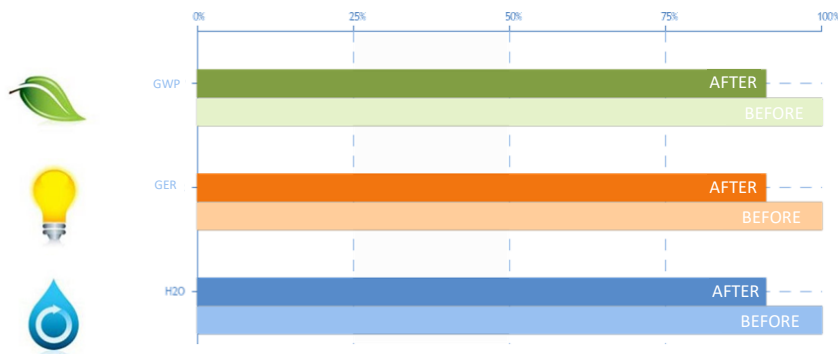
Aluminium

The company intervened on the Simmenthal brand's aluminium box for jellied meat by reducing its thickness. This resulted in a 13% reduction in packaging weight.

Prevention Drivers

Saving raw materials

SIMPLIFIED LCA ANALYSIS RESULTS



Scope: 90g

Source: CONAI Eco Tool



Perlana black liquid detergent for dark clothes

Henkel Italia Operations S.r.l.

Henkel Italia Operations S.r.l./ Perlana black liquid detergent for dark clothes/2020

HOUSEHOLD DETERGENT

Plastic

For the HDPE bottle of the Perlana detergent for dark garments, the company introduced two changes:

- use of 25% post-consumer recycled HDPE;
- replacement of the black master batch from carbon black to carbon black free.

Unlike the previous solution, the latter intervention allows the bottle to be sorted by the automatic systems of the sorting plants for subsequent recycling.

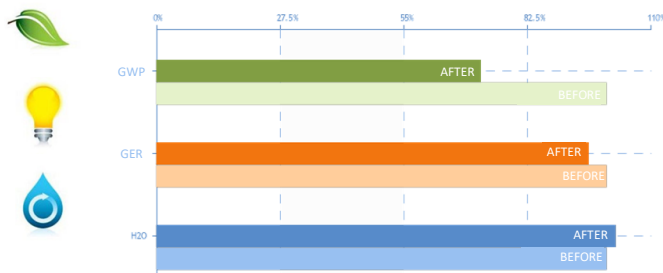
The use of 25% recycled HDPE has been extended to the entire range of bottles in the Perlana line.

Prevention Drivers:

Facilitation of recycling

Use of recycled material

SIMPLIFIED LCA ANALYSIS RESULTS



Scope:

1500 ml

Source: CONAI Eco Tool

MPS INDICATOR (Second Raw Material Generated)

It evaluates the amount of second raw material that can be generated by end-of-life packaging reuse operations, considering the average Italian context. This material can thus re-enter another production process as a raw material. The higher this value, the more second raw material is generated.



Source: CONAI Eco Tool



Coop adult underwear range display hanger

COOP ITALIA

COOP ITALIA/Coop adult underwear range display hanger/2020

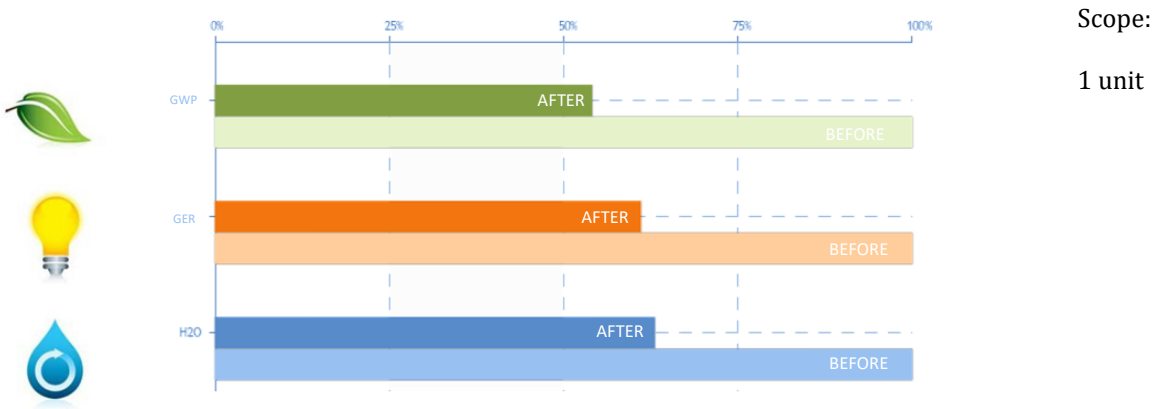
OTHER SECTORS

Plastic

The polystyrene (PS) display hanger for the adult underwear range *Coop Adult Underwear*, used for 29 items, was redesigned and replaced with a PS with 70% recycled material. With an eco-design approach, the hanger was modified in shape, reducing its weight by 27% and its footprint. In addition, with a simple manual adaptation by the consumer (label instructions), the hanger can be reused as a clamp/clip.

Prevention Drivers:
 Use of recycled material
 Saving raw materials

SIMPLIFIED LCA ANALYSIS RESULTS



Source: CONAI Eco Tool

Brown Lift Lock (BRL) box

IFCO Systems Italia Srl

IFCO Systems Italia Srl/Brown Lift Lock (BRL) box/2019

SOLID FOODSTUFFS
Plastic



IFCO Systems Italia srl introduced to the market the polypropylene container (PP) IFCO Brown Lift Lock, to be used as secondary packaging in the baking industry. This container, unlike the cardboard boxes normally used for the same function, is reusable and has removable sides to optimise space in return logistics.

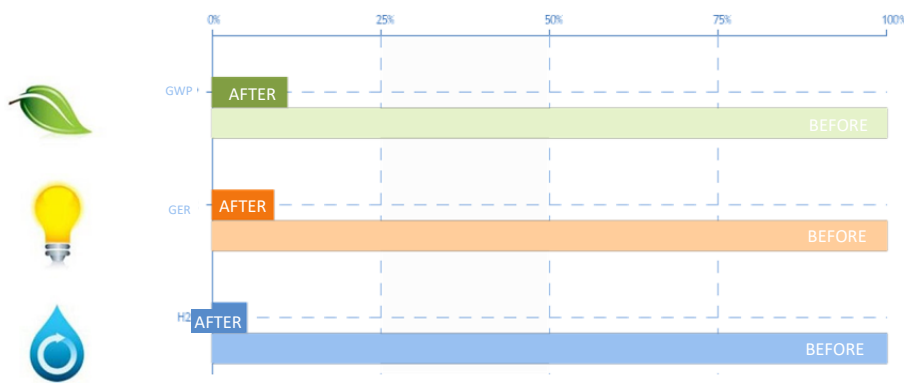
As they are designed to be reused several times, damaged containers are repaired and those that cannot be repaired are regranulated by the company itself and used for the production of new containers.

Finally, the IFCO Brown Lift Lock container is the only reusable container designed for the bakery industry that is resistant to temperatures between -23°C and $+60^{\circ}\text{C}$, which are essential for pasteurisation processes.

Prevention Drivers:

Re-use

SIMPLIFIED LCA ANALYSIS RESULTS



Scope:

15kg

Source: CONAI Eco Tool



Recycled plastic pallet with RFID TAG

Bayer S.p.A.

Bayer S.p.A./Recycled plastic pallet with RFID TAG/2020

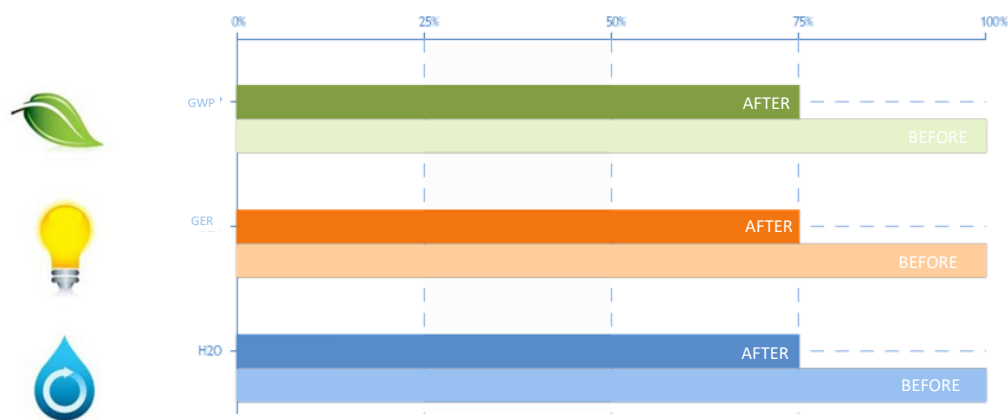
OTHER SECTORS

Plastic

Bayer S.p.A. has installed RFID TAGs on its polypropylene (PP) pallets that enable them to be fully traceable in the distribution chain and the optimise collection for subsequent reuse. In particular, the inventory activity carried out by the company confirmed the effectiveness of the intervention by increasing the number of average rotations of the pallet by 33%.

Prevention Drivers:
Re-use

SIMPLIFIED LCA ANALYSIS RESULTS



Scope:

1 unit

Source: CONAI Eco Tool



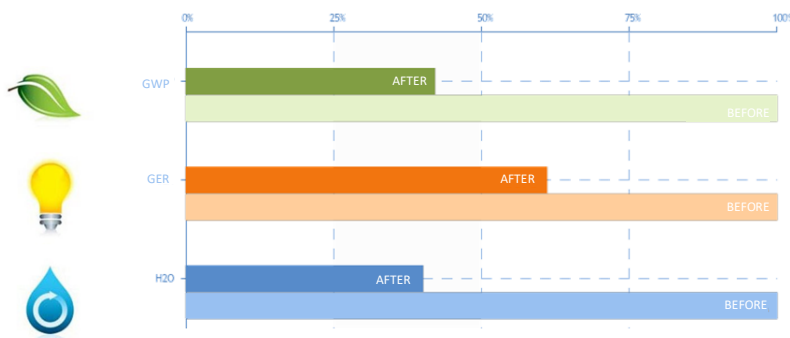
E|Pad envelope
SALES S.R.L. SOCIETA' BENEFIT
!!SALES S.R.L.
SALES S.R.L. SOCIETA' BENEFIT !!SALES
S.R.L./E|Pad envelope/2020

OTHER SECTORS
 Paper

The company Sales Srl introduced a new, recyclable, paper-based (paper-HDPE) poly laminate envelope that is Aticelca-certified to level B, to replace the non-recyclable, paper-based (paper-LDPE-PET, with a plastic bubble wrap inner protective layer) poly laminate one used previously. The paper that makes up the new envelope is made from 100% recycled material, and logistics have improved, doubling the number of envelopes that can be transported on pallets.

- Prevention Drivers:**
 Facilitation of recycling
 Use of recycled material
 Optimisation of logistics

SIMPLIFIED LCA ANALYSIS RESULTS

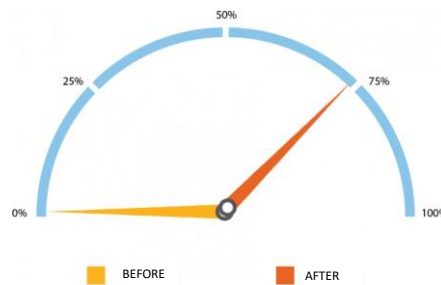


Scope:
 1 unit

Source: CONAI Eco Tool

MPS INDICATOR (Second Raw Material Generated)

It evaluates the amount of second raw material that can be generated by end-of-life packaging reuse operations, considering the average Italian context. This material can thus re-enter another production process as a raw material. The higher this value, the more second raw material is generated.



Source: CONAI Eco Tool



Wooden composite box

Wartsila Italia S.p.A.

Wartsila Italia S.p.A./Wooden composite box /2020

OTHER SECTORS

Wood

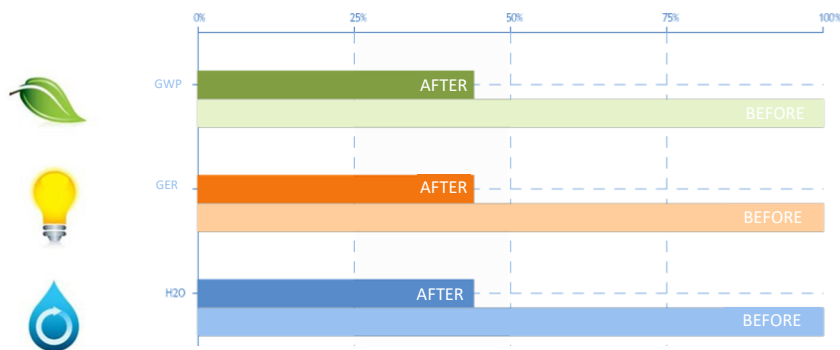
The work carried out concerns the modification of a wooden box used for transporting a crankshaft, so that once the contents have been used, it can be dismantled, shipped back to the supplier and reused for the next shipment. Also, the weight of the box was reduced by 11%.

Prevention Drivers

Re-use

Saving raw materials

SIMPLIFIED LCA ANALYSIS RESULTS

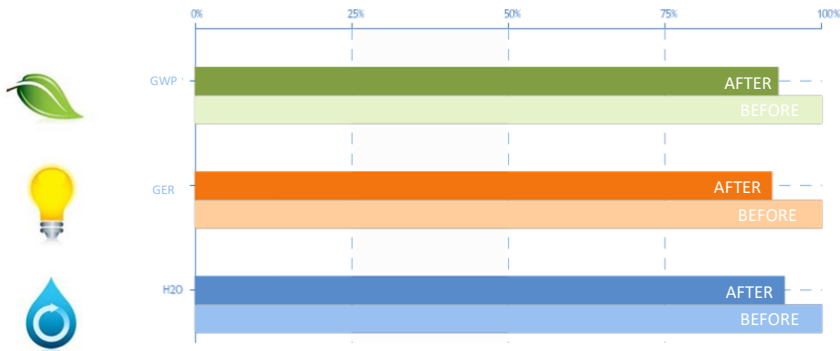


Scope: 1 unit

Source: CONAI Eco Tool

	<p>Acqua alle Rose face cream 50ml</p> <p>Manetti&Roberts</p> <p>Manetti&Roberts/ Acqua alle Rose face cream 50ml/2020</p> <p>PERSONAL CARE</p> <p>Glass/plastic</p> <p>The intervention concerns the modification of the shape of the jars for the 50 ml face creams of the Acqua alle Rose brand, with a reduction in weight of the glass jar (-4.5%) and the polypropylene cap (-15%).</p>
<p>Prevention Drivers Saving raw materials</p>	

SIMPLIFIED LCA ANALYSIS RESULTS



Scope: 50 ml

Source: CONAI Eco Tool

Synoptic table of the measures adopted by the Packaging Material Consortia and Self-compliance EPR organizations to achieve the targets pursuant to Article 225 paragraph 1 of the TUA – Consortia

a) Prevention of the generation of packaging waste;	
STEEL Steel-RICREA Consortium	<ul style="list-style-type: none"> ▶ Increased investment in the optimisation of the packaging weight-surface area ratio; enhancement of packaging performance (multiple creases, deep-drawing and new geometric configurations) in the light of increasingly strict regulations (health and hygiene, transport of dangerous goods, etc.).
ALUMINIUM CiaI	<ul style="list-style-type: none"> ▶ Study aimed at monitoring the evolutionary trend (reduction in use of material) of the various aluminium packaging components (can, canister, box, tray, foil, etc.) over the last 20 years. ▶ Ongoing industry activities to reduce packaging weight and awareness campaigns to increase the collection of portions of the thinnest and smallest fractions.
PAPER Comieco	<ul style="list-style-type: none"> ▶ Use of pulp in the production of paper and cardboard for packaging; ▶ Investments aimed at reducing the grammage of corrugated cardboard. ▶ Best Pack: the collection of virtuous paper and cardboard for packaging on the national and international scene. ▶ Encouraging companies to participate in national and international awards that promote eco-design. ▶ Collaborations with universities regarding the eco-design and sustainability of cellulose-based packaging.
WOOD Rilegno	<ul style="list-style-type: none"> ▶ Promotion of the use of certified wood from neighbouring sites. ▶ Push towards the use of energy from renewable sources. ▶ Use of post-consumer waste chipboard blocks or spacers, chipboard planks for pallet assembly and chipboard panels for creating industrial crates. Of particular note is the fact that blocks for pallets produced in recovered wood already PEFC-certified have obtained the Remade in Italy certification. ▶ Reduction of weight consistent with required performance in terms of use, transport and safety. ▶ Reduction of waste from processing. ▶ Use of waste from processing to produce first and second choice packaging. ▶ Optimisation of logistics through the design of wooden packaging with folding walls and the possibility of assembly by the user. ▶ Promotion of environmental certifications and labels. ▶ Promotion of GPP and CAMs
PLASTIC Pari	<ul style="list-style-type: none"> ▶ Investment in a regenerated granule with similar characteristics to virgin granule for the production of packaging.

	<ul style="list-style-type: none"> ▶ Continued attention to the reduction of film thicknesses and increasing recycled material.
PLASTIC CO.N.I.P.	<ul style="list-style-type: none"> ▶ Use of recycled material to produce crates for fruit and vegetables and for pallets. ▶ Incentives to its Consortium members for “second life plastic” certification.
GLASS Coreve	<ul style="list-style-type: none"> ▶ Focus on making packaging more lightweight. ▶ Reducing the quantity and harmfulness to the environment of raw materials used in packaging through the use of scrap glass for packaging production. ▶ Development of the VAR returnable circuit. ▶ Push to use scrap glass leading to: raw material savings; energy savings; CO₂ emissions savings. ▶ Push to use scrap glass fractions in the building industry.
b) Growth of the proportion and quantity of recyclable packaging compared with the quantity of non-recyclable packaging;	
ALUMINIUM CiaI	<ul style="list-style-type: none"> ▶ Promotion of an additional treatment option for the fine fraction at treatment plants in order to maximise recovery. ▶ Promotion of “Design for Recycling” guidelines. ▶ Supporting the extraction and recycling of aluminium from bottom ash for subsequent recycling.
PAPER Comieco	<ul style="list-style-type: none"> ▶ Supporting CONAI for assessments of fee modulation on paper-based poly laminate packaging. ▶ Monitoring the granting of the Aticelca mark for the recyclability of packaging. ▶ Supporting the European research project CYCLEbyCELL (Horizon Europe call), with the aim of experimenting and promoting the use of an innovative cellulose microfibre “functional barrier”, to be placed between the recycled material and the food in order to allow the use of cellulosic second raw material. ▶ ▶ Membership of the European 4evergreen network, to strengthen the contribution of fibre packaging to the circular economy, and participation in specific working groups for the drafting of guidelines on eco-design, collection and sorting. ▶ Seminars and conferences on recyclability and innovation also in the food sector. ▶ Best Pack: the collection of virtuous paper and cardboard for packaging on the national and international scene.
WOOD Rilegno	<ul style="list-style-type: none"> ▶ Use of recycled wood and semi-finished products in packaging manufacturing
PLASTIC Corepla	<ul style="list-style-type: none"> ▶ Technical support of CONAI for plastic packaging fee modulation

	<ul style="list-style-type: none"> ▶ Participation in the EPBP (European PET Bottle Platform) for the evaluation of the recyclability of PET beverage bottles as part of the EPRO (European Association of Plastic Recycling and Recovery Organizations) prevention and recycling guidance activities. ▶ Participation in national and international initiatives aimed at promoting the recycling of plastic packaging.
PLASTIC Coripet	<ul style="list-style-type: none"> ▶ Launch of an experimental project to sort a mixed CPL PET product (MCPL PET) at sorting facilities to recover and recycle the portion of CPL PET that is currently considered non-recyclable as well (the opaque coloured bottles with a covering label).

c) Growth of the proportion and quantity of reusable packaging waste compared with the quantity of non-reusable packaging;

STEEL Steel-RICREA Consortium	<ul style="list-style-type: none"> ▶ Support of reconditioning and regeneration of used steel packaging.
WOOD Rilegno	<ul style="list-style-type: none"> ▶ Inspections of plants for the regeneration and sorting of used pallets. ▶ “Wood Packaging Reprocessing” project to encourage the repair of wood pallet waste.
PLASTIC Corepla	<ul style="list-style-type: none"> ▶ Support of reconditioning and regeneration of used plastic packaging.
GLASS Coreve	<ul style="list-style-type: none"> ▶ Monitoring of the VAR returnable circuit.

d) Improvement in the packaging characteristics with the aim of allowing this to withstand several trips or rotations in normal foreseeable conditions of use

STEEL Steel-RICREA Consortium	<ul style="list-style-type: none"> ▶ Support of reconditioning and regeneration of used steel packaging.
PAPER Comieco	<ul style="list-style-type: none"> ▶ Best Pack: the collection of virtuous paper and cardboard for packaging on the national and international scene.
WOOD Rilegno	<ul style="list-style-type: none"> ▶ Inspections of plants for the regeneration and sorting of used pallets. ▶ “Wood Packaging Reprocessing” project to encourage the repair of wood pallet waste.
PLASTIC Corepla	<ul style="list-style-type: none"> ▶ Support of reconditioning and regeneration of used plastic packaging.
GLASS Coreve	<ul style="list-style-type: none"> ▶ Monitoring of the VAR returnable circuit.

e) Meeting recovery and recycling targets.

STEEL Steel-RICREA Consortium	<ul style="list-style-type: none"> ▶ Development of steel waste packaging recovery from unsorted waste. ▶ Campaigns to raise awareness among citizens of quality separate collection. ▶ Continuation of communication work to support the development of separate collection in schools and with local authorities/associations.
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	<ul style="list-style-type: none"> ▶ Development of the brand: Metal Recycles Forever, owned by MPE, to streamline messages on environmental issues around metal packaging in Europe.
ALUMINIUM CiAl	<ul style="list-style-type: none"> ▶ Development of effective and efficient collection models. ▶ Support of additional recovery options such as cap recovery from glass separate collection, recovery of aluminium from unsorted waste or post-combustion slag, treatment of the fine fraction at sorting plants. ▶ Promotion of induced-current separation systems. ▶ Campaigns to raise awareness of quality separate collection among citizens.
PAPER Comieco	<ul style="list-style-type: none"> ▶ Targeted communication activities to make citizens aware of the values of separate collection and recycling.
WOOD Rilegno	<ul style="list-style-type: none"> ▶ Communication projects aimed primarily at fostering good practice for recovery of wood and cork with institutions, companies, citizens, schools and the younger population. ▶ Partnership in the European Horizon 2020 project titled “Underpinning the vital role of the forest-based sector in the Circular Bioeconomy – Project Woodcircus”. The main aim of the project is to increase knowledge, raise awareness and improve conditions for an uptake of resource efficient processing and recycling in wood-based value chains.
PLASTIC Corepla	<ul style="list-style-type: none"> ▶ Promotion of digital recycling stations at sector negotiations as a collection method to be integrated with those currently provided for in the agreements between EPR and ANCI systems. ▶ Adoption of incentives to improve the recycling performance of sorting facilities. ▶ Fostering and promoting PIA³², PIFU³³ and PEPS³⁴ platforms. ▶ Support for projects to evaluate the possibility of exploiting the “bottom of the tank” and PLASMIX with flameless oxy-combustion technology to obtain CO₂ and energy. ▶ Launch of the study to investigate the possibility of mechanically recycling flexible plastic/aluminium polylaminate packaging materials that currently go to energy recovery. ▶ Continuation of the RiVending project for the collection and recycling of polystyrene cups and pallets (used in hot drinks vending machines). ▶ Verification of the recyclability of PET trays through the use of chemical depolymerisation recycling. ▶ Support for research projects aimed at increasing both the percentage of products recycled compared to energy recovery and the development of new applications and synergies along the entire the plastic packaging chain.

³² Platforms for plastic packaging waste from industrial, craft trades and commercial activities which have signed an agreement with COREPLA.

³³ Recovery plants from dedicated drum, canister and tank circuits.

³⁴ Recovery plants from dedicated expanded polystyrene circuits.

	<ul style="list-style-type: none"> ▶ Targeted communication activities to make citizens aware of the values of separate collection and recycling. ▶ Communication activities aimed at informing and raising awareness among citizens/schools on how to correctly manage plastic packaging. ▶ Supporting communication activities in relation to marine litter. ▶ Continuing promotional and support activities aimed at municipalities and/or contracting companies in order to increase the quantity and quality of separate collection of plastic packaging.
PLASTIC CO.N.I.P.	<ul style="list-style-type: none"> ▶ Communication activities aimed at informing on how to correctly manage plastic crates and pallets.
PLASTIC Coripet	<ul style="list-style-type: none"> ▶ Continuation of the process of intercepting PET bottles post-consumption from the milk return circuit for subsequent recycling. ▶ Development of apps and social media activity to promote a culture of PET bottle recycling. ▶ Increasing the number of digital recycling stations installed.
GLASS Coreve	<ul style="list-style-type: none"> ▶ Communication campaigns aimed at improving the quality of packaging waste collection, particularly regarding ceramics, crystal, television screens and computer monitors. ▶ Support for projects aimed at the improvement of separate collection. ▶ Promotion of projects to reduce the ceramic content in packaging waste collected from the hospitality circuit.

Declaration of verification of the Sustainability Report



CONAI - National Packaging Consortium Green Economy Report 2020 Independent Declaration of Assurance

Introduction

DNV Business Assurance Italy S.r.l. (DNV) was appointed by CONAI management to conduct an audit of its 2020 Sustainability Report ("Green Economy Report 2020") with regard to Sustainability Reporting Standards of the Global Reporting Initiative (GRI).

For details on the corporate structure and scope of reporting, please see the Green Economy Report.

CONAI is responsible for the collection, analysis, aggregation and presentation of information including the data (information) contained in the Green Economy Report. The audit is based on the assumption that the information provided in good faith by the Consortium is complete, sufficient and authentic.

In carrying out the work commissioned to us, in accordance with the conditions agreed with the Consortium, DNV is solely liable toward the management of CONAI.

Scope of the Assurance Work

The scope of the work arranged with CONAI entailed the following aspects:

- analysis, according to a *Moderate level* of Assurance, of sustainability activities and data attributable to the period between January 2020 and December 2020, as specified in the Green Economy Report;
- Evaluation of the reporting principles presented in the GRI Sustainability Reporting Standards, according to the option "GRI-referenced claim";
- Auditing of the processes for reporting and editing of the document.

Information of an economic nature is not included in the scope of the audit.

Auditing Methodology

Our audit was planned and conducted in accordance with DNV's "VeriSustain" auditing protocol (<https://www.dnvgl.com/assurance/reporting/index.html>) based on our professional experience and international best practices with regard to assurance, including the International Standard on Assurance Engagements - ISAE 3000. These documents require, among other things, the verification team to possess the relevant knowledge, capability and professional expertise to be able to carry out the verification of sustainability information in addition to the ethical requirements necessary to guarantee its independence.

In accordance with the protocol, the Green Economy Report was evaluated with regard to the following criteria:

- reporting principles of the GRI Sustainability Reporting Standards;
- requisites for the "GRI-referenced claim" option of the GRI Sustainability Reporting Standards;
- principles of the ISAE 3000 standard for the verification of non-financial information.

Our audit was conducted remotely in October 2021.

An integral part of the audit was the analysis of the statements and assumptions related to sustainability specified in the Green Economy Report and the evaluation of the robustness of the data management system, flows of information and related checks.

We randomly examined and reviewed the information made available by CONAI; in particular:

- CONAI's current mechanisms for implementing its own sustainability policies, as described in the Green Economy Report;
- the processes for determining the materiality of the content to include in the Green Economy Report;
- the processes for generation, collection and management of the quantitative and qualitative data included in the Green Economy Report;

Three representatives of the organization were interviewed directly and indirectly as part of the project "Obiettivo Riciclo 2020" (2020 Recycling Objectives), and about fifteen individuals involved in the management of the aspects reported in the Green Economy Report.



Conclusions

In the opinion of DNV, CONAI's Green Economy Report 2020 is an accurate and unbiased representation of the sustainability strategies adopted by the consortium.

On the basis of the work carried out, no elements came to our attention that led us to believe that CONAI's Green Economy Report 2020 was not drafted, in all significant aspects, in line with the "GRI-referenced claim" requirements referenced in the Sustainability Reporting Standards of the Global Reporting Initiative (GRI).

Further conclusions and observations on the adoption of reporting principles and specific information on performance are detailed below:

Inclusivity: The document highlights CONAI's commitment to promoting and developing initiatives that regularly and systematically involve its stakeholders.

Sustainability Context: The information and data presented within the Green Economy Report adequately reflect the strategy, commitments and activities carried out by CONAI in relation to the context of sustainability within which the consortium operates.

Materiality: The Green Economy Report reflects CONAI's commitment to providing information and data that enable its stakeholders to assess the economic, social and environmental performance of the consortium. The section "Conai per...", which guides and orients stakeholders to use the information that is of most interest to them proved to be particularly effective.

Completeness: The Green Economy Report allows stakeholders to assess CONAI's sustainability performance during the reporting year and provides understanding of its sustainability strategies and objectives. The information contained in the document refers to the structure defined in the scope. In the case of data attributed to a more limited scope, the document identifies this restriction.

Accuracy: From our analysis of the data and the operational processes that generate it, the data reported in the Green Economy Report is the result of stable and repeatable activities. The information contained in the document is therefore sufficiently accurate and detailed.

Neutrality: The Green Economy Report is a full and unbiased description of CONAI's impacts and performance in terms of sustainability. The document reflects the Consortium's willingness to represent its activities and results for the reporting year in a balanced manner and consistent with its corporate strategies.

Clarity: The information presented in the Green Economy Report is understandable, accessible and usable by CONAI's stakeholders.

Comparability: The information given in the Green Economy Report allows the parties affected to analyse changes in current economic, environmental and social performance compared to the performance in previous years, bearing in mind that this is the first year that the document has been drafted according to GRI criteria.

Reliability: The data included in the Green Economy Report was identifiable and traceable. The staff responsible were able to reliably show the origin and interpretation of the data.

In carrying out our work, we detected a limited number of non-significant errors, which were corrected before the revised version 1 of the Green Economy Report was issued.

Timeliness: CONAI reports periodically to allow stakeholders to make informed decisions.

Opportunities for improvement

In the course of carrying out the activity, no further opportunities were revealed for improvement of the processes for the collection and reporting of data, which achieved a high level of maturity.

Expertise and Independence of DNV

DNV is a leading provider of services related to sustainability, including the verification of sustainability reports. Our environmental and social assurance specialists work in over 100 countries. DNV was not involved in the preparation of any statements or data included in the report, with the exception of this Declaration of Assurance. DNV remains completely impartial towards the stakeholders interviewed during the auditing process. DNV accepts no liability or joint responsibility for any decision that may be made by any person or body based on this Declaration of Assurance.

On behalf of DNV Business Assurance Italy S.r.l.

Riccardo Arena
Lead Verifier
[signature]

Vimercate (MB), 25-10-2021

Alessia Segalini
Reviewer
[signature]

Statement no. STAT-14951-2021-CSR-ITA-DNV

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CONAI environmental policy

The National Packaging Consortium (**CONAI**) is a **legal entity under private law, is non-profit and must ensure the global targets for recovery and recycling of packaging waste are achieved** as referenced in Article 220 of Legislative Decree no. 152 of 3 April 2006, as well as the necessary **coordination of separate collection activities**. The Consortium members include **companies producing and using packaging** with the application of the provisions of Article 221, paragraph 2 and Article 224, paragraph 1 of the aforementioned Decree.

CONAI distributes among its consortium members compensation for costs relating to separate waste collection services, transport, sorting and other preliminary operations, as well as the costs of recycling or recovery of packaging waste disposed of in the separate collection. Whereas it **determines and charges the CONAI Environmental Contribution (CAC) to producers and users of packaging** which is used as a priority for the collection of primary packaging or otherwise delivered to the public service. **The fee may be modulated according to their reusability and recyclability.**

CONAI directs and ensures the activities of seven packaging material consortia (Ricrea, Cial, Comieco, Rilegno, Coperta, Biorepack and Correva) relating to the packaging material used to produce the packaging, to which it applies the fee in proportion to the quantity of packaging put on the market. In addition, **CONAI is obligated to ensure coordination and cooperation between all public and private operators involved in the management of packaging and packaging waste** as provided for in the aforementioned Article 224 of Legislative Decree no. 152 of 3 April 2006.

To achieve the targets set by the legislation in force, CONAI has decided to **implement and abide by** this “Environmental Policy” through an **Environmental Management System** in line with the provisions of technical regulation **UNI EN ISO 14001 and Regulation 1221/2009 as amended** disseminating it widely.

CONAI’s commitment is articulated through various principles.





A growing contribution to the circular economy and environmental safeguarding

CONAI exerts its influence on two levels: the first – the most relevant and of an indirect nature – related to consortium management; the second – of a direct nature – related to its own activity.

In relation to consortium management, CONAI **promotes the increase in the amount of reusable and recyclable packaging** and improvements in environmental performance by taking concrete actions upstream and downstream in the supply chain. Upstream, by means of **specific incentives of a direct nature** (such as fee modulation) and the **implementation of projects and tools to serve businesses, with the aim of both minimising the environmental impact** of packaging and packaging waste (prevention and eco-design), and **improving – quantitatively and qualitatively – the recycling performance of packaging**. Downstream in the supply chain, CONAI's commitment takes the form of measures to support local authorities such as plans for the development of separate collection for the recycling of packaging waste, plans and programmes for industrial development and infrastructure to support the municipal waste management cycle, start-up and communication activities, and structured training for staff.

With regard to the environmental impacts related instead to the performance of its own activities, CONAI implements internal procedures aimed at identification, reduction and monitoring them. It also adopts environmental criteria in liaising with suppliers, including green procurement, involving all staff and stakeholders and raising their awareness of environmental improvement issues.

Reinforced stakeholder relations

CONAI promotes cooperation between public and private stakeholders, coordinating the necessary link between public administrations, packaging material consortia and other economic operators by ensuring and encouraging discussion with their stakeholders, also through the organization of working groups and panels (e.g. Gdi, Prevention, GdL, Simplification, ANCI-CONAI Framework Agreement common panel), as well as via the CONAI Academy Community online platform.





Skill development

CONAI firmly believes in the enhancement of skills , whether they are internal or external to the organization. **It promotes collaboration with universities and the academic sector on a continual basis** through training programmes on the circular economy (Green Jobs) and the provision of webinars to keep up to date, also in partnership with recognised training providers.

Full compliance with mandatory and non-mandatory requirements

CONAI is committed to **complying with all regulations in effect (Reporting of Plans and General Plan for Prevention), agreements (ANCI-CONAI Framework Agreement)** and the commitments made to its own stakeholders. **It identifies specific responsibilities** within its organization and adopts, where possible, the highest standards of compliance with reference to recognised Best Practices (GRI, DNF). In addition, CONAI supports companies in adapting to new EU obligations which they are subject to (e.g. environmental labelling of packaging) through dedicated services and tools.

Accountability

CONAI enhances and makes its unique body of data and information increasingly useful to institutions and various stakeholders: from placement on the market to data on local waste management, calculation methods and the results in terms of environmental benefits of the packaging waste reuse chain at national level. **It guarantees transparency and the streamlining of flows of information related to packaging supply chains**, designed to enable timely reporting on recycling and recovery performance at national level. All methods of data reporting of the EPR organization are continually updated to the highest quality standards and are validated annually by an accredited third party.





Organizational process improvement

The management adopts an environmental management system that complies with the requirements of standard ISO 14011 and Regulation 1221/2009 (EMAS) as amended. **CONAI encourages the implementation of the best organizational methods and educates the facility on participation and continuous improvement** aimed at the achievement of the outcomes of its management system.

The management is committed to guaranteeing the adoption of tools to achieve the established objectives, verifying their suitability, also through the Environmental Management System, and adapting them to the new requirements as a result of local regulatory developments and knowledge.

[signature]
The Chair
Luca Fernando Ruini

Milan, 18 February 2022



Declaration of verification of the Recycling Objectives Project



CONAI - National Packaging Consortium

Declaration of verification of the 2020 Recycling Objectives Project

INTRODUCTION

The "Recycling Objectives" project is intended to ensure a high level of control and transparency of the data collection and aggregation processes generated and managed by the EPR organization and participants in the project.

CONAI's objective is to validate the methodology used to determine the data on the packaging put on the market and the recycling and recovery of packaging waste, by means of verification by an independent certification body, as an additional guarantee for institutions that the targets set have been achieved.

For this reason, CONAI requested that DNV conduct an audit of the procedures used by the EPR organization and project participants for determining the information and data on packaging produced and packaging waste sent to recycling and recovered.

CONAI and the participants (Cial, Comieco, Conip, Corepla, Coreve, Ricrea and Rilegno) collect and process data that contribute to the quantification of the packaging streams put on the market and packaging waste sent to recycling and recovery in Italy. This data is formalised in the documents required by the applicable regulations and sent to the competent authorities.

AUDITING SCOPE AND METHODOLOGY

The activity carried out in agreement with CONAI concerns the verification of the procedures used to determine the data on packaging products put on the market and packaging waste sent to recycling and recovery.

The work was conducted by an auditing team made up of DNV staff and industry experts identified by CONAI according to the following procedures:

Document analysis: the documents prepared and made available by CONAI were analysed in order to highlight any areas for improvement in the system implemented;

Verification of documents: the documents made available by various participants were analysed in order to verify compliance with the provisions of the "General Criteria" determined by CONAI;

On-site audit: the operational implementation of the "General Criteria" determined by CONAI and the "Technical Specifications" determined by each supply chain consortium through on-site audits at the premises of participants. Due to the ongoing covid-19 (SARS-CoV-2) pandemic, this activity was carried out remotely using the platform "Webex" provided by CONAI;

Witness audit: the auditing activity carried out by each supply chain consortium was conducted using "witness" procedures, at facilities contributing to the generation of data on packaging waste sent to recycling and recovery.

The audit activities carried out from May to November 2021 concerned:

- Verification of the documentation prepared by CONAI and by all participants

- remote on-site audits of CONAI and all participants, according to the above procedures;
- witness audits at the sites of some operators that contribute to the determination of supply chain data; in particular:
 - CONAI: a municipal waste incineration plant;
 - CiAL: an aluminium packaging waste collection and sorting plant and a smelting facility;
 - Comieco: a platform for paper waste collection and sorting;
 - CO.N.I.P: a plant for the production and recovery of plastic crates for fruit and vegetables;
 - CiAL: a plastic waste sorting plant and a recycling plant;
 - Co.Re.Ve: a glassworks;
 - Ricrea: a ferrous waste reprocessing plant and a drum and tank reprocessing and regeneration plant;
 - Rilegno: a platform for wood-based waste collection and sorting;

CONCLUSIONS

Based on the auditing activity carried out to date, it is considered that the Stream Management System implemented by CONAI and participants is reliable and aligned with the objectives of the Recycling Objectives project.

The effective traceability of randomly verified data as part of the audit activity is noted. The staff responsible for its management were able to prove their source and procedures with which it is processed.

The cooperation of the participants and those involved in the implementation of the criteria determined by CONAI and in the effective management of the opportunities for improvement that emerged during the audits in previous years is particularly appreciated.

DECLARATION OF INDEPENDENCE

DNV was not involved in the preparation of any information documented, nor in the collection of information and data, or their interpretation. DNV was not involved in the processing of the conclusions of the Targeting Recycling project and the associated documents. Therefore, it maintains complete impartiality with regard to the contracting party, the auditing and the parties that created the Stream Management System.

LIMITATION OF LIABILITY

The evaluation of the management system was based on the auditing of a sample of available information. Consequently, there is an element of uncertainty reflected in the evaluation results.

The absence of findings does not mean that none exist in the areas assessed and/or other areas. The suggestions for improvement reported by DNV do not constitute all the opportunities for improvement that may be present in the organization, but only those identified during the assessment,

The assessment was based on the information the organization made available to DNV.

DNV cannot guarantee the accuracy and/or correctness of this information and cannot be held liable or jointly responsible, by any of the parties involved, for decisions made or not made on the basis of this Declaration of Verification.

Before the final version was issued and prior to the issuing or renewal of the auditing certificate, this report is also subject to an independent internal review by DNV that may affect the content and findings reported.

Vimercate (MB), 19/11/2021

On behalf of DNV Business Assurance Italy S.r.l.

[signature]

Riccardo Arena

Head of Auditing

Document II

General Programme for the Prevention and Management of Packaging and Packaging Waste

5.

Measures and tools to achieve the targets of prevention, reuse, recycling and recovery pursuant to Article 225, paragraph 1 of Italian Legislative Decree 152/2006

This chapter describes the initiatives and measures that CONAI intends to implement and promote in the coming years, with the aim of continuous improvement with respect to the current objectives, also taking into account the regulatory changes already introduced, such as the New Framework Programme Agreement and the transposition of the SUP Directive, and which will arrive as shown below and already reported in the relevant chapter.

EUROPEAN LAW FRAMEWORK TRENDS
NEW FEATURES IN 2022

PACKAGING DIRECTIVE
30 May 2022 - presentation by the EU Commission of the outcome of its second Packaging Directive amendment impact assessment. The main new features are:

- Introduction of **packaging waste prevention targets** (5% in 2030 and 10% in 2040)
- definition of recyclable packaging**
- introduction of minimum standards for DRS deposit refund systems**
- introduction of recycled content goals for plastic packaging**
- labelling approach**

WASTE DIRECTIVE

- Launching of European Commission work on **EOW criteria for plastic waste**
- Publication of the 2022/162 Implementing Decision **on calculating, assessing and communicating reductions in the use of certain single-use plastic products** and the measures adopted by Member States to achieve such reductions

AMENDMENT OF REGULATION 282/2008
on recycled plastic for food contact use

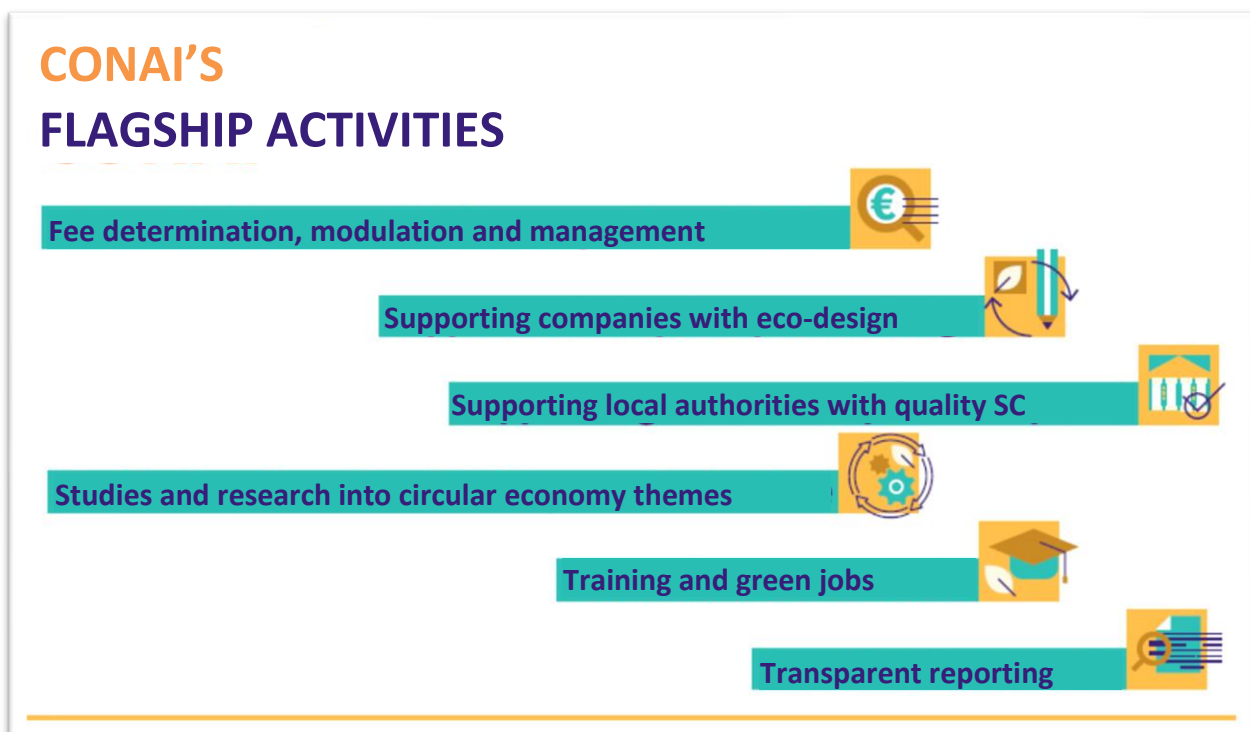
In particular, it will be essential for the entire supply chain to increase the commitments and efforts already made in identifying solutions that meet the objectives of prevention, reuse and recycling and at the same time ensure environmental preferability compared to others.

The medium- to long-term strategy bases its activities on regulatory developments, which introduced new targets and reporting systems, and is set in an uncertain context characterised by the effects of the ongoing war in Ukraine.

CONAI will continue to promote a model that operates not only in the name of common goals, but also of a system strategy that includes opposing stakeholders and interests on the same

steering committee, within which responsibilities are shared between the public and private spheres, acting as a driving force for the development of an increasingly circular supply chain model.

In addition to giving continuity to the structural and system activities that have been consolidated over the years, the fields of intervention within which CONAI intends to act with targeted activities, in order to perform the duties and achieve the objectives set out in the standard, are described below. And it intends to do so by drawing on its resources and activities in relation to different areas.



Fee determination, modulation and management

There will be an increasing focus on the issue of fee modulation of the environmental contribution and its consistency with respect to the actual costs borne by producers and users, as defined by current legislation, guaranteeing flexibility and the ability to adapt rapidly to changes in the context without ever compromising the protection of environmental interests. Timeliness of intervention on the determination of the fee values will be increasingly necessary in future, to cope with both positive and negative situations.

This includes the decision of May 2022, whereby CONAI intervened by rounding the value of the fee for steel, aluminium, paper, plastic and glass packaging downwards. This decision comes after the usual evaluation procedure, which took into account the surprising development of the sales revenue for these five recycling materials. Their continually rising market values have generated extremely positive economic effects for the EPR organization, which have allowed for most of the environmental contributions to be reduced. This is in spite of the overall growth in the separate collection of packaging; The reductions in the environmental contribution will enter into force on 1 July 2022. CONAI has already arranged to carry out a new analysis after the summer months, checking with the consortia about the possibility of further interventions in all supply chains, starting in 2023.

Material	Fee in force from 1 January 2022 (€/tonne)	Fee in force from 1 July 2022 (€/tonne)
STEEL	12	8
ALUMINIUM	10	7
PAPER level 1 (basic)	10	5
PLASTIC level A.1	104	60
PLASTIC level A.2	150	150
PLASTIC level B.1	149	20
PLASTIC level B.2	520	410
PLASTIC level C	642	560
GLASS	33	29

At the same time, following the preliminary investigation developed by the Fee Modulation Working Group, the Consortium decided that, from 1 July 2022, all tethered caps, designed to remain attached to their beverage containers, will be moved from level B2 to B1 in line with the SUP guidelines. Additionally, from 1 January 2023, plastic packaging will be categorised into nine levels with different contribution values, rather than the current five. This continues the process of alignment with the environmental contribution modulation criteria indicated by the law, in particular of elements – with the relative economic impacts – such as durability, repairability, sortability, reusability, recyclability and the presence of any hazardous substances.

CONAI's twofold commitment thus continues, to increasingly linking the values of the environmental contribution both to actual recyclability and the destination circuit and to the supply chain deficit, i.e. the relationship between costs and revenues of collection, sorting and recycling activities. And to this end, the further segmentation of this packaging in force was decided, to become effective from 1 January 2023.

The current level A1 will be divided into two: A1.1 and A1.2, to separate items on which COREPLA pays a fee for regeneration and recycling activities (drums and IBC containers, which will be in level A1.2).

The current A2 will stay the same.

Level B1 will also be segmented into B1.1 and B1.2, with the aim of separating PET items (in B1.2) from HDPE items (which will be in B1.1).

The current B2 will be divided into three levels. Rigid polypropylene containers will be in B2.1; polyolefin-based recyclable items under B2.2. Level B2.3 was instead created to accommodate packaging with experimental recycling chains and ones in the process of being established, which thus come out of level C.

The latter remains effective, albeit refined, for packaging with currently experimental that is not sortable/recyclable with current technologies.

Current levels	Levels from January 2023	Main level reclassifications
A1	A1.1	
	A1.2	Drums and tanks
A2	A2	
B1	B1.1	Rigid HDPE containers, including sortable black, and tethered caps
	B1.2	Clear PET bottle
B2	B2.1	Rigid PP, labels (IML, PP>50%)
	B2.2	Flexible PE and PP + rigid PE + EPS
	B2.3	PET thermoformed, opaque, sleeved, hangers, unexpanded PS
C	C	

All these assessments and their timeliness to ensure consistency for companies in fulfilling their EPR obligations, are made possible by the progressive strengthening of the system's accountability and the study and research activities that have enabled the development of calculation and forecasting models that are more refined in relation to the evolution of the particularly changeable context, with particular reference to the volatility of second raw material prices.

PACKAGING SECOND RAW MATERIAL INDEX

Methodological approach

Since 2022, CONAI has been developing a **trend index for second raw materials** for packaging with Prometeia, which is updated every two months. The index is calculated as the

relative weight (in tonnes) of second raw materials generated out of the total amount of packaging recycled in Italy, calculated as the 2015=100 average of the euro prices of the corresponding second raw materials. The index consists of two sub-indices, one related to the share managed by the CONAI EPR organization and one relating to the share of non-managed. Both are calculated (again as the average 2015=100) according to the relative impact of the individual inputs.

The trend of the two sub-indices also clearly shows the contribution of the EPR organization as a subsidiary of the market, tending to always be positioned below the index relating to unmanaged material, since, in both upturns and downturns, the lowest value streams remain with the system.

Facilitations and simplifications

In the five-year period 2022–2026, in the context of the “Simplification” council Working Group, CONAI will continue to be engaged in activities for the simplification of various operational procedures for the application, exemption and declaration of the fee, making increasing use of digital tools. At the same time, the assessment will continue of cases concerning types of packaging (such as reusable) or streams (e.g. minimal packaging) for which to reserve further facilitated formulas or extend existing ones with respect to the application of the environmental contribution. Alongside these lines of intervention, support for consortium members in the application of consortium procedures and the protection of fair competition between companies operating in the same sector will as always be a primary objective for CONAI.

The following activities are of note:

- a) **on the issue of simplification**, a feasibility study for the realisation of a project aimed at abolishing CONAI environmental contribution declarations for **producers/traders in empty packaging**, at the same level of turnover by Conai. In short, the hypothesis for the study foresees that the consortium may directly use the data of electronic invoices (if appropriately integrated) issued by the consortium members themselves at the time of the so-called “first transfer” of the packaging. A discussion in relation to this has already been requested with the Revenues Agency for the presentation of the project, given that the data of electronic invoices are available at the Interchange System (SDI) managed by the agency. In the meantime, the study continues with the gradual involvement of these categories of consortium members, who – on a voluntary basis – will be able to sign up to the new

simplified model from January 2023. A period of 4–6 months is envisaged during which consortium members will continue to send CONAI both the declarations and the electronic tracking of the invoices, to promptly verify any qualitative and quantitative information inferable from the two sources and to make any necessary alignments with the information strictly necessary for the invoicing of the fee. At the same time, again in the context of the simplification to be reserved for **importers of filled packaging**, technical analyses will be continued to identify/determine standard weights for packaging relating to particular streams such as those from overseas, put on the market through the e-commerce channel, for which a distinction by various industry sectors is being evaluated. The digital conversion of consortium forms will also be substantially completed for the various self-declarations, which from 2023 will be made available exclusively online;

- b) **On the issue of facilitations**, more detailed information has been added to the consortium forms for consortium members wishing to take advantage of the exemption and other facilitated/simplified formulas reserved for reusable packaging used in virtuous return systems (Conai Circulars of 5/4/2012, lett. b) and of 2/7/2012 point 1). At the same time, the following were introduced: (i) an exemption from the environmental contribution reserved for waste generated in the context of self-packaging; (ii) a new procedure reserved for the repair of wooden pallets conforming to codified specifications, owned by third parties;

As support for companies and their trade associations, the tested and proven activities and initiatives described in section 2.7.6 will continue and be intensified and supplemented, where necessary (*Supporting consortium members and protecting fair competition*). These activities, together with others in progress or planned, are aimed at bringing the EPR organization closer to packaging manufacturers and users, while protecting fair competition in the market in which they operate.

Supporting firms with eco-design

CONAI intends to enrich and push the promotion of eco-design tools made available to companies more, in order to foster the notions of *eco-design* and *design for recycling*, widely, with the aim of creating a common and unique awareness and culture on circular design, which can enable the recycling industry to work effectively, thanks to the cooperation of all stakeholders in the supply chain.

An additional objective is to create a strong network between the companies that adopt and embrace these tools. To this end, in order to outline common objectives and strategies for building an increasingly circular supply chain, in the coming years CONAI will propose a call to action towards companies that embrace the eco-design initiatives proposed by CONAI, aimed at defining a charter of commitments on sustainable packaging that represents them and in which they feel represented.

Implementation of the SUP Directive

Following the entry into force of Legislative Decree no. 196 of 8 November 2021 on 14 January 2022, implementing the Directive on the reduction of the effect of certain plastic products on the environment, CONAI drew up the guidelines to support companies and various stakeholders.

The document, which is intended to represent a snapshot of the measures currently in force in Italy with regard to single-use plastic packaging, was subject to public consultation for a month from 25 May and a consolidated version will be published in July. As has already been done in the past for other guidelines, the aim is to bring together all useful points to create a complete shared document that conveys comprehensive indications for companies in the industry.

E PACK

The service will continue to support companies and enterprise associations in the production of packaging with reduced environmental impact and in compliance with current environmental regulations.

Environmental labelling

In particular, in view of the entry into force of the mandatory environmental labelling of packaging in January 2023, CONAI will continue to support companies on the issue through epack@conai.org, and by intervening on the various tools made available with potential appropriate updates, if necessary, in the face of further regulatory changes.

In particular, the aforementioned platform dedicated to the environmental labelling of packaging is being continuously updated and developed (www.etichetta-conai.com). In this regard, over the course of the year, a collaboration was set up with GS1 for the joint development of an **Environmental Labelling Observatory**, which monitors the degree of adoption of environmental labelling on the packaging of products sold in the consumer goods market on a six-monthly basis.

In the development of new tools and services on this topic, it will be essential – as it has been so far – that there is synergistic collaboration with companies and associations. CONAI will continue in this sense to keep the dialogue going with these stakeholders in order to develop services and collaborations on the issue of environmental labelling that can be increasingly designed for individual product sectors, in order to meet – and standardise, with a view to simplification – the demands of companies in an increasingly extensive manner.

Design for recycling

In the next five years, the platform Design for Recycling will be completed with further guidelines for the facilitation of packaging recycling, therefore following up on Design for Recycling. In particular, work will be started by the end of 2022 on the drafting of the *Guidelines for the facilitation of steel packaging recycling activities*, again in partnership with one of the leading universities in the sector.

Design for Recycling is therefore a reference point and a real network in which various stakeholders are called upon to cooperate in order to meet the new environmental challenges with innovations and technologies that can only be put in place thanks to the creation of synergies and discussions between designers, packaging manufacturers and users, research centres, packaging machinery manufacturers and stakeholders in the recycling chain.

Over the next few years, this activity will also be extended to the glass packaging chain.

Development of the CONAI EcoD TOOL

The EcoD Tool will be continually updated over time with particular reference to information on the end-of-life of packaging, consistent with the development of the recycling industry. In the coming years, the intention is to take full advantage of the use of the tool and the indicators, so that the EcoD Tool becomes an effective tool for working with, evaluating, and measuring the circularity and recyclability of packaging, both for companies and other strategic stakeholders. In particular, important updating activities have already been initiated, with the aim of:

- exploit the indicators investigated and make them more usable and communicative;
- make it possible for users to use the results of the indicators for certain purposes, subject to requests addressed to CONAI, and validation by a third-party certification body;
- extend the use of the EcoD Tool to parties other than CONAI members, such as students, research centres and consultants and design firms, providing specific user licences.

-

Bando CONAI per l'eco-design del packaging

CONAI will continue to promote the packaging eco-design call, which promotes, exploits and gathers the experiences of companies that have invested in prevention to make their packaging environmentally sustainable.

Given that more and more companies are coming on board with the initiative, CONAI's objective is to enhance and strengthen the *Call* in order to make it more and more an environmental communication tool for companies and an incentive to report and highlight the innovations made on their packaging, promoting a culture of environmental responsibility among all their stakeholders, customers and consumers.

Furthermore, for CONAI, the participation felt by companies in this initiative represents the strengthening and development of a monitoring body on the types and environmental characteristics of packaging put on the market. The information collected is essential to build a single database for reporting on the design choices made by companies and the creation of a system for measuring the relevant results in terms of environmental benefits.

Supporting local authorities with quality separate collection

CONAI will continue to implement the activities and commitments set out in the currently applicable ANCI-CONAI Framework Agreement. In particular, the box below provides details of the new changes in the current agreement, which requires the identification of companies carrying out market analysis to be carried out by a third party, which in turn will be identified by an institution.

CHANGES TO THE ANCI-CONAI FRAMEWORK AGREEMENT: THIRD-PARTY CALL FOR TENDER

In order to ensure the implementation of the principle of co-responsibility for packaging waste management between producers, users and public administrations, the National Association of Italian Municipalities (“**ANCI**”) and CONAI have signed a framework programme agreement (“**ANCI-CONAI Framework Agreement**”) effective from 1 January 2020 to 31 December 2024.

Article 5.3. of the ANCI-CONAI Framework Agreement, concerning “*Criteria for defining the quality of packaging waste disposed of under agreement*”, stipulates that the technical annexes must regulate the qualitative characteristics of the separated collections and the means and

conditions of the auditing activities, including unannounced ones, while still guaranteeing the statistical representativeness, transparency, objectivity and independence of the sampling and subsequent product analyses.

With this in mind, the same article sets out that the pursuit of the aforementioned objectives is to be achieved by entrusting an institutional body with the identification of a third party that will in turn be responsible for identifying, through a competitive procedure and in accordance with the technical and operational guidelines shared between ANCI, CONAI and the packaging material consortia, each for the supply chain of interest, companies qualified to perform product analyses for their respective materials (“**Operational Companies**”).

The Operational Companies thus identified are then contracted by the respective packaging material consortia for the purpose of carrying out product analyses, which will be performed in accordance with the aforementioned technical guidelines.

In this context, on the recommendation of the Conference of Italian University Chancellors, CONAI and ANCI identified a three-member Commission as the “**Institutional Body**” responsible for identifying the third party through a selection procedure to be carried out in accordance with the criteria, terms and conditions predefined and shared among the parties.

The object of the call for tender is the selection of a third and independent party (the “Third Party”) which is responsible for carrying out the following activities in the process of product analysis, pursuant to Article 5.3. of the ANCI-CONAI Framework Agreement.

- identification, by means of a competitive procedure and according to the technical and operational guidelines shared between ANCI, CONAI and the packaging material consortia, of the Operational Companies to be entrusted with the performance of product analyses;
- periodic supervision and auditing of both the Operational Companies and the relations between them and the packaging material consortia;
- validation of the reporting on the activities carried out by the Operational Companies vis-à-vis the packaging material consortia for conducting product analyses;
- reporting to the coordinating and auditing committees;
- activities to verify and assess any non-compliance related to the failure of packaging material consortia to take back material.

New Framework Programme Agreement

The process of defining the new Framework Programme Agreement continues as described above, i.e. through discussions in the various panels between the various stakeholders involved in terms of the law. This will take up the entire current year and at least part of next year. In this regard, it should be recalled that the deadline by which EPR schemes must adapt to the regulatory provisions introduced by Legislative Decree 116/2020, a date related to the deadline by which the new Framework Programme Agreement must reach a definition, is 5 January 2023. It is therefore deemed appropriate to intensify the discussion during the second half of this year and in the following months so as to reach a definition of the new Programme Agreement by the first half of 2023.

In this regard, discussions will continue within the Common Panel and the Restricted Technical Tables cited in it, including the table of digital recycling stations, where the sharing of rules with which to manage this particular selective collection method is pursued; the Analysis Table, where the agreement on a management method for the analysis of goods is being pursued, both for the qualification of waste collection streams and for the qualification, where necessary, of streams leaving the sorting plants. The Common Panel will also see the parties discuss the transposition in terms of ARERA's first considerations of determination of fees, in relation to the second period of pricing adjustments for the waste sector.

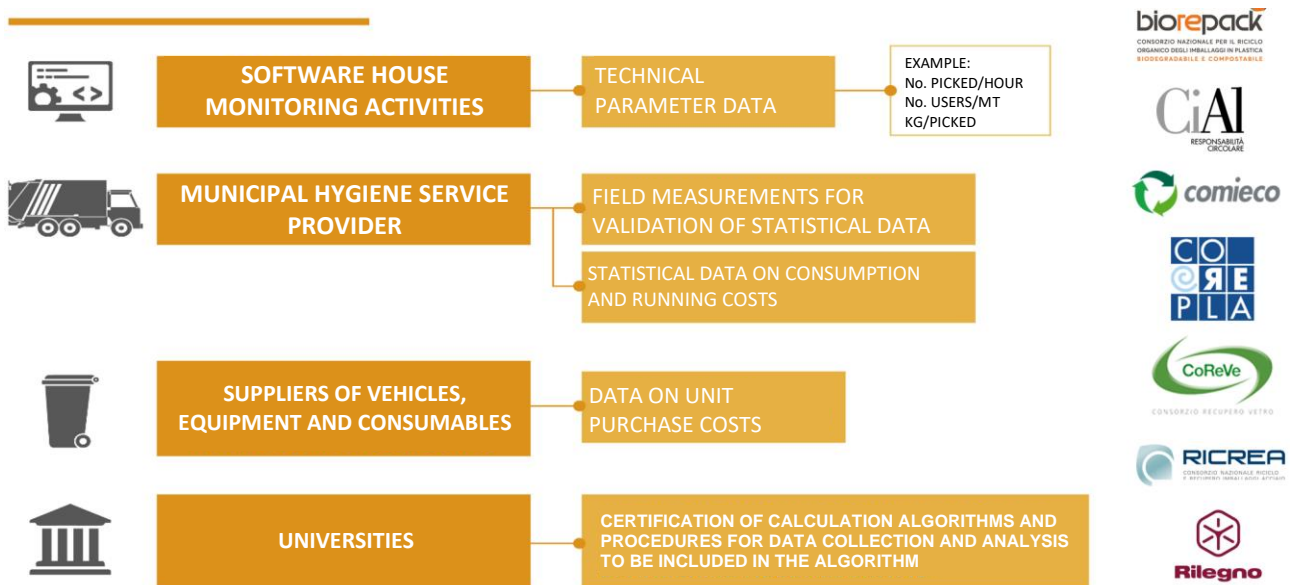
These Panels will also be accompanied by the respective Sector Panels, for the definition of the respective Sector Annexes, which, together with the General Part defined by the aforementioned Common Panel, will constitute the new Framework Programme Agreement.

Determination of efficient coverage costs for packaging EPR requirements:

Among the most important areas of activity in view of the definition of the National Framework Programme Agreement, there is the configuration of fees in light of the new provisions of Legislative Decree 116 and of what will be by ARERA defined with regard to “efficient costs”. The ANCI - CONAI 2020/2024 Framework Agreement, in CHAPTER 4 – paragraph 16 already provides for *“the implementation, in conjunction with the transposition of directives 2018/851/CE and 2018/852/CE, of a technical study on the most economical, efficient and effective collection methods and the preparation of tools and indicators to define the costs to be borne by the producers and users of packaging (pursuant to Article 218, letters r) and s) of Legislative Decree 152/06) and the degree of coverage guaranteed by the fees of this Agreement.*

To this end, the PARTIES – recalled in the premise (24) of Directive 2018/851/EC and Article 1 paragraph 527 of Law 205/2017 – shall contribute, in cooperation with ARERA, IFEL, ISPRA and universities and organizations with recognised competence in this field, as well as with the most representative associations of companies operating in the waste management sector, to determine the following cost items pursuant to Article 8-bis of Directive 2008/98/EC: costs of the separate collection of packaging waste and its subsequent transport, including the treatment necessary to achieve the relevant target quantities to the extended producer responsibility scheme. In such an event, i.e. as a result of the transposition of Directives 2018/851/EC and 2018/852/EC, in applying what is shared in point (F) of Chapter 2 of this Agreement the PARTIES agree as of now to proceed with a revision also of the fees according to the provisions of the regulation transposing the aforesaid European Directives and in light of the above findings.”

In order to follow up on the provisions of the current Framework Agreement, CONAI and ANCI initiated initial technical analyses involving various stakeholders, in order to arrive at the objective of determining, in time for the definition of the Framework Programme Agreement, a set of values and key reference indicators for the efficient costs of services covered by EPR for packaging.



Regional activities in the central and northern regions of Italy

In the coming years, local activity in the central and northern regions will be oriented towards:

- respond to the demands of the region;
- foster collaboration with the regional governments and metropolitan areas;
- promote environmental sustainability for major events.

In particular, with the regional government, studies and analyses will be pursued of the management models in the region and the related collection results in terms of both quantity and quality.

To this end, where there is a sharing of intentions with government bodies, activities will be launched to monitor the various waste streams, from production to the recovery/recycling stage, to be carried out also through product analysis sessions to provide qualitative information. The results will then be cross-referenced with the management models from which the streams analysed originated. This is intended to characterise regions according to collection models, distinguishing between those that are efficient, those that need intervention to improve quality and those with unsatisfactory standards, also in quantitative terms.

One particular tool for monitoring environmental performance is the aforementioned “Environmental Meter”, successfully used on several occasions. Its purpose is to quantify the positive effects and benefits to the environment of separate waste collection and, therefore, to report on the performance of careful waste management. With the aim of replicating and further sharing these experiences, it is intended to engineer an environmental accounting tool that can be made available to municipalities or groups of them.

Integrated waste cycle

In addition to the continuation of support activities for local authorities, in line with the provisions of the ANCI-CONAI Framework Agreement, further extraordinary projects will be developed to promote the integrated management of packaging waste.

New extraordinary projects

Digital Recycling Stations Project

In light of what is increasingly emerging in Italy, from the impact of the “Plastic Eating” Decrees to those of the diversification of supply chains with the Decrees of the PNRR – National Recovery and Resilience Plan referred to in Ministerial Decree 396/2021 measure 1.1 line A), CONAI considered it indispensable to carry out a pilot project to promptly understand the complex management of digital recycling stations. The objective, shared with the packaging material consortia, is to monitor: streams of material collected, management and maintenance costs, quality and user involvement. In addition, the aim is also to understand the dynamics of stream migration, i.e. whether the infrastructure recovers more material or there is a simple migration from traditional waste collection. The activities are being defined and are scheduled to start in the second half of 2022.

Guidelines on packaging waste management in Italian ports

After 4 years of work in Parliament from 11 May 2022, those who recover plastic waste in the sea or fresh water will be able to bring the waste into port, for proper management. The Senate finally approved the “Salvamare Law”, which was presented to parliament in 2018 by then Environment Minister, Sergio Costa. Article 2(7) states that, in order to spread the costs resulting from the article over the entire national community, the costs of managing RAP (accidentally fished waste) are to be covered by a specific component of the management tariff of the integrated waste service. In particular, this is configured as an additional component of the waste tax or as an additional component of the tariff set by municipalities that have implemented systems for the prompt measurement of the quantity of waste delivered to the public service and that involve the application of a tariff of a corresponding nature. On the basis of these premises and considerations, the need arose to carry out a study on the existing legislation and the impact that the new “Salvamare Law” will have, including the technical solutions to be adopted depending on the type of waste generated and the liability with respect to the different service managers.

Guidelines for the Sustainability of events

CONAI initiated a process for the developing “Guidelines for the sustainability of events”, with the aim of offering event organisers a guide on waste management in the context of large events,

as well as a set of ideas and initiatives to make all the areas of intervention analysed as sustainable as possible during all stages of the event.

The guidelines will be drawn up based on CONAI's experience and work over the years and with reference to the most recent currently available literature, with the aim of being applicable to various types of events, irrespective of activities, size and duration. For each area of intervention identified, good practices will be reported that can be adopted generally for all events and, where necessary, specific actions for certain types of particular or large events will be explained. The aim is to provide the organisers with the necessary guidance to implement concrete actions that are in line with the consortium's own aims, i.e.:

- prevention of waste generation, with actions that avoid impact on the environment, both for packaging and other types managed within the packaging material consortia;
- Exploitation of the circularity potential of materials, with solutions that enable and facilitate end-of-life recycling or reuse of materials used at all stages of the event;
- Raising of awareness and information on virtuous waste management at all levels, with actions to improve the knowledge of participants and other stakeholders.

The actions identified to achieve these aims, which vary according to the size and type of event, may intersect different areas of intervention into which the organization of the event is divided, such as: general organization of the event, marketing and communication activities, permanent and temporary infrastructures, procurement of goods and services, staff, food & beverage, accommodation and hospitality.

Estimate of the plant requirements or equivalent quantities

In central and southern Italy, CONAI will support the development of the integrated cycle of municipal and assimilated waste with particular reference to the quantitative and qualitative increase in packaging waste by favouring efficient and effective systems for collection that guarantee recycling and recovery, with a watchful eye on regions that are lagging furthest behind in reaching the legal targets. CONAI will be constantly involved in regional planning activities, local development of industrial collection plans, traceability of streams and training and information for local governors.

Sadly, the Italian south suffers from a dramatic shortage of waste sorting and treatment plants, making it difficult for Italy to expect significant improvements in its recycling performance in the coming years. For the first time CONAI has carried out an assessment, based on its

experience, of the country system's plant needs to make the regions of central and southern Italy autonomous.

In order to estimate the EU 2030 separate collection targets, an assessment was made of the waste production trend on a national scale and considering the slight discrepancy (up and down) from 2011 to the present, it was deemed useful to make the projection with the data available in the ISPRA 2020 Report, according to further assumptions:

- For composting and TMB (mechanical biological treatment) plants, having the ISPRA data relating to plants and their authorised quantities as of 2019 (ISPRA Report 2020), the difference between the 2030 target in terms of t/year and the currently authorised quantity was used.
- For sorting plants, soil, absorbent and bulky waste treatment plants, the difference between the estimated quantities for 2030 and the ISPRA 2019 quantities was used, assuming that the existing plants are sufficient to treat the quantities produced today;
- For service landfills and incineration plants, the assumption used was that of the material entering the new TMBs, 70% goes to incineration, 5% is process loss and additional material recovery (mostly metals) and 25% is non-recoverable material (low calorific value) to be disposed of in landfills.

The following estimate identifies the plant requirements needed to make the central and southern regions autonomous to achieve the EU 2030 Targets.

ESTIMATED PLANT REQUIREMENTS AT FULL CAPACITY IN 2030			
	Number of plants	Investments (millions of euros)	Number of staff
Combined Composting Plants (Aerobic-Anaerobic)	55	665.6	780
Aerobic Composting Plants	2	10	22
Sorting plants	14	174	475
Soil treatment plants	31	80.6	217
Absorbent waste treatment plants	25	99.2	248
Bulky waste treatment plants	14	21	196
Service landfills	24	515	312
Incineration plants	3	600	90
TOTAL	165	2,165.4	2,340

Italy would need to acquire about 165 new plants or the equivalent in tonnes. An investment that is estimated to be above two billion euros, the repercussion of which may also be significant on the employment front – the new plants would require more than 2,300 direct employees to be hired, not counting the allied industries.

This estimate, as well as the assessments that led to it, were made available to the competent national and local bodies, as part of further support for the definition of the National Municipal Waste Management Programme and its local declinations. Over the next few years, CONAI will continue on these issues, particularly at local level and in the light of the investments that will also be possible due to the PNRR funds.

Platform for the management of industrial and commercial waste

In order to verify the adjustment of the network of platforms to the needs of companies operating in the region, CONAI initiate an in-depth analysis of their extent and proximity in relation to the needs for recovery of secondary and tertiary packaging waste not absorbed by the market. Based on this analysis, which will be able to be conducted with collaboration from the trade associations as well as the packaging material consortia concerned (Corepla, Comieco, Rilegno and Ricrea), it will be possible to proceed with any proposals to implement the network in order to overcome any critical issues.

Studies and research into circular economy themes

In the coming years, CONAI will promote ad hoc in-depth analyses and updates on the research already started in previous years, which concern:

- the role of companies – research is under way in partnership with the Sant'Anna School of Advanced Studies in Pisa, aimed at measuring the level of circularity of Italian companies and their awareness of the issue. The research will be reported in a publication that is now published every three years by CONAI to take stock of companies' commitment to sustainability;
- the role of consumers – the **SCelta Project** is now in its third edition this year and now acts as an observatory, which will also be updated in the coming years, on the circular purchasing trends of Italian consumers. In particular, in the course of 2022 the Observatory

will also be accompanied by an in-depth analysis by IPSOS to better characterise consumer households and how they position themselves with respect to the circular economy;

- The role of local authorities, with the usual update on the **Observatory for local prevention**, which is also intended to be made available online, and the continuation of work with **Green City Network**. In addition, a new site will be developed where information on the separate collection methods and performance of all Italian municipalities will be gathered, which can be used for research and reporting by CONAI and various stakeholders, as well as by providers wishing to develop digital tools based on geolocation for the environmental labelling of packaging;
- the role of the market and the recycling chain, in order to monitor the level of circularity in the packaging market, to be able to design a system strategy for the coming years that promotes greater circularity in the sector, together with more effective communication that channels supply and purchase choices;
- The evolution of Green Public Procurement, as already reported, with activities to keep up with the latest developments with respect to the CAMs.

In addition, other areas of study and analysis will concern *upcycling*, which is growing throughout the country, and issues relating to the management of production waste and the innovations of companies that, often through synergies and collaborations with the supply chain, engage in recovery and reuse of by-products. This is in order to identify the best way to promote such initiatives.

Studies and research for the development and promotion of the circular economy

CONAI supports and promotes a series of studies and research for the promotion and development of the circular economy. During 2022, several projects were supported and implemented to review the circular economy in Italy, and studies on the positioning of the country in relation to circularity, with respect to other European countries.

In particular, CONAI sponsored the **Report on the Circular Economy** by the Fondazione per lo Sviluppo Sostenibile (Foundation for Sustainable Development), the **Green Italy Report** courtesy of Symbola and the **Circular Economy in Italy** study by the Ambiente Italia group. Studies confirm Italy as a leading country in the circular economy and recycling, as the central support among the positive outcomes achieved. Over the next few years, due updates of these studies will continue to be promoted, which will be useful in guiding the country system towards an increasingly circular economy.

In the coming years, CONAI will continue to support sector studies on the circular economy with the aim of contributing to the research with the expertise from its more than 20 years' experience on the topic of circularity, so as to identify which actions it will be appropriate to promote in order to achieve the objectives.

Promotion of the second raw material market

As a founding member of REMADE IN ITALY, CONAI has always supported the work related to the certification of a transparent supply chain for the use of recycled material.

CONAI intends to develop synergy and cooperation also with institutes/bodies that operate in the field, particularly at national level, to systematise a central issue such as the use of recycled material.

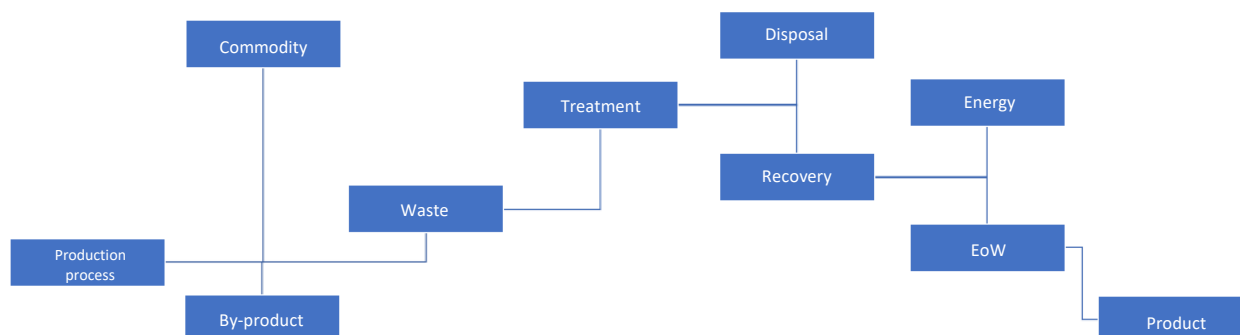
In addition to the more institutional activities, in the context of upstream prevention and design, CONAI believes that a new field of research will be design from recycling. This is also in light of possible new minimum requirements for packaging that could include minimum ratios of recycled material in their manufacture, but also to better understand the actual potential for use of recycled materials and how technological development can contribute to this. In fact, there are often two main barriers that companies encounter when replacing virgin raw materials with recycled ones. On the one hand, ensuring equal performance (technical and visual), which can also be encouraged through the use of blends or additives, and on the other hand, the machinability of recycled materials.

End of Waste

The work is being published as one of the latest pieces of content in the CONAI Academy and presents an in-depth look at the issue of the application of end-of-waste status. Infographics are presented for companies, with practical indications regarding the application of the regulations to the various types of packaging materials concerned by reviewing all decrees in force to date. The analysis, carried out in partnership with Tuttoambiente, will be monitored and updated in line with the evolution of the legislation.

End of Waste

The procedure via which **waste** loses its status as such and acquires that of a **product**, after undergoing a **recovery process**.



Observatory on the utilities strategy in the waste sector

The landscape of the Italian waste recovery and recycling system has entered a period of profound and dynamic evolution, with several new entrants that are active in new waste streams and new previously uncovered geographic areas, due to the continuous development of the sector and the growing need for new treatment capacity. In this context, multi-utilities and energy and network operators are among the most active stakeholders, with investments that are in some cases a result of vertical integration strategies of segments of the waste chain where companies already have significant activities (as in the case of some multi-utilities); in other cases as strategies that complement their established energy businesses (as in the case of companies active in oil & gas). The development also reflects the growing relevance of wide-ranging environmental issues, and in particular the topic of the circular economy, in all market sectors, supported by policy instruments and public investments as well as a growing focus of finance on ESG (environment, social & governance) issues.

The study, which was started in 2022 in partnership with AGICI Finanza d'Impresa, aims to identify and analyse the main market dynamics of utilities, energy and network operators in the field of municipal waste collection, treatment, recovery and recycling, including in relation to the different local governance systems in the country. The ultimate goal is to represent the strategies of companies in a way that is comprehensive and up to date, in two ways:

- by identifying actions put in place by economic operators in terms of acquisitions of waste operators, investments in new technologies and facilities, the establishment of new business divisions dedicated to recycling, agreements and partnerships, for example.
- by performing an overview analysis of emerging trends, representing companies' strategies at an aggregate level and mapping possible market developments.

Circular economy and waste market objectives: structural aspects of market design and universality of the service

The study promoted with the collaboration of Bicocca University is currently being completed and investigates the roles of different economic operators in public utilities with network characteristics, analysing their market architecture. The paper introduces the role of CONAI in reporting on environmental results, in planning and monitoring the evolution of environmental targets, in coordinating agreements between different stakeholders in the supply chain and in supporting local authorities by analysing aspects of organizational efficiency in relation to market structure. In addition, issues relating to the development prospects of the sector – given the ongoing strengthening of circular economy objectives at national and European level – are discussed in depth, and constitute an increasingly significant challenge in terms of organizational efficiency choices.

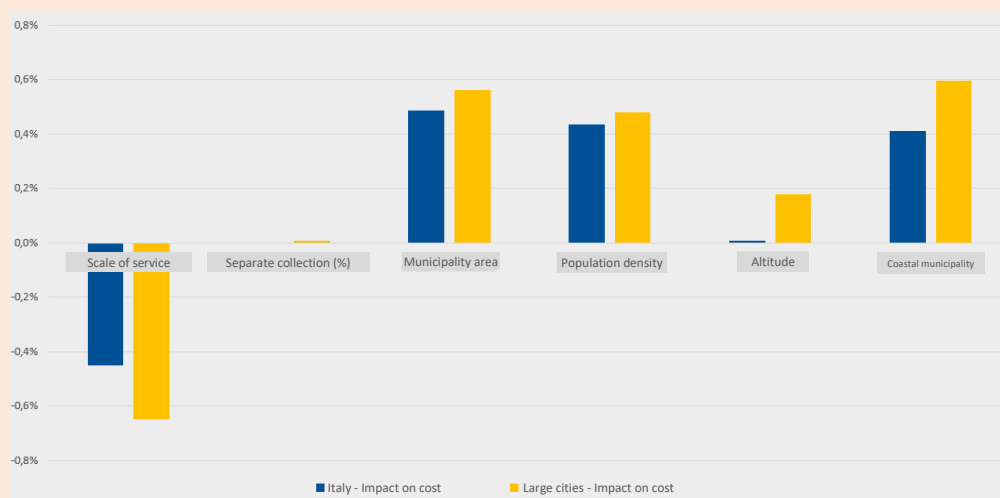
EFFICIENT AND COST-EFFECTIVE PACKAGING WASTE SEPARATE COLLECTION SERVICES - ECONOMIES OF SCALE

The study shows the significant inverse relationship between the percentage of separate waste collection and the costs of the municipal hygiene service, also referred to in a recent resolution of the Court of Audit in an analysis of the quality of spending of municipalities, with significant economies of scale (as the quantity of waste managed increases by 1%, the average cost per tonne of waste treated decreases by 0.7%). The analysis conducted for CONAI by Bicocca University³⁵ shows that as the size of the service – intended as the quantity of waste managed – increases by 1%, the average cost decreases by 0.5% at the Italian level. This decrease in cost is accentuated if the reference sample is restricted to the main Italian

³⁵ Analysis conducted on MUD data provided by ISPRA with the relevant detailed information through the register of waste. This data allows comparable information to be obtained with regard to the various components of the total cost of the service. In particular, the costs of managing the cycle of services on separate and unsorted municipal waste, including street sweeping and washing costs, collection and transport costs, treatment and disposal costs.

cities, which therefore add a further comparative element by sharing more economic and social as well as morphological characteristics compared with municipalities of a much smaller size. In fact, in large urban areas, as the size increases by 1%, the cost of the municipal hygiene service decreases by 0.62%, with possible benefits also for the community given the potential savings on the cost of managing the service and therefore on the TARI. The following figure summarises the above in graphic form.

Determinants of the costs of the service and economies of scale



These considerations were not only made available to the MITE during the consultations on the PNGR for the definition of effective, efficient and economical separate collection models for the recycling of packaging waste. They are also reflected in the concrete experience brought by CONAI, where economies of scale in relation to the size of the bodies are an important variable of the project approach in supporting the context of southern Italy.

Forecast models for packaging put on the market

In the area of data refinement, collaborations continued with Prometeia to develop and implement specific models for calculation of the forecasts for packaging placement on the market. Over the course of 2022, a special investigation will be promoted on the prospects for the evolution of the “packaging mix” in the light of regulatory developments and the innovation strategies promoted by companies. Over the course of 2022, there was a special focus on assessing the effects of the Ukrainian crisis on supplies of virgin and second raw materials and the possible medium- to long-term effects on the continuation of the economic situation.

Research and development

The role of technology and technological innovation in ensuring that new packaging waste streams find their way to recycling is certainly central to ensuring that the new 2030 recycling targets are met, particularly in some sectors.

Among the activities that CONAI proposes to start is the exploration of the main and most promising recycling technologies under study and development on the most complex fractions. This survey will provide a starting point to better guide the efforts of the various stakeholders, primarily packaging material consortia.

Among the planned objectives is the prospect of setting up a discussion panel on this issue with the packaging material consortia, aimed at evaluating and analysing possible synergies and feasible collaborations. The establishment of a coordination panel could be an opportunity to create a discussion chamber for harmonising and linking the needs of the different sectors.

Training and green jobs

CONAI intends to target environmental training and skills development, which will be necessary in the near future to ensure Italy achieves results in waste recycling. Various training initiatives in this regard are already under way and target:

- journalists;
- Public administration staff;
- technical representatives from associations and companies;
- university students;
- New graduates;
- primary school pupils.

The main activities in this context are specified below.

ANCI-CONAI Webinar on Technical Annexes to the Framework Agreement

In 2022 there were a set of webinars launched for the training of local governors with the presentation of the ANCI-CONAI Technical Annexes on packaging materials. The activity is part of the ANCI-CONAI two-year training programme, within which there is a set of five webinars

planned to explain material by material, how municipalities can enter into agreements with consortia, what commitments they take on and what benefits they can gain from them.

Municipal technical training programme

A training course on waste management is planned to be developed for young and newly recruited PNRR and staff in the regional, provincial and municipal authorities, to respond to the project line of improving sustainable waste management in the circular economy and to implement the strategy set out in the PNRR. One of the driving hypotheses could be to become part of the government's online platform for digital training of the public administration, with regard to ecological transition topics.

Also for municipal technicians, under the ANCI-CONAI Framework Agreement, a training package will be offered to finalise when CONAI is called upon to prepare a plan for an ATO. In addition to the usual support tools for the development of separate waste collection and service start-up activities, there will be a training activity for municipal technicians focusing on the management of tenders for separate waste collection services, waste treatment services, the pay-as-you-throw scheme and plant authorisation.

Training seminars for journalists registered with the Association of Journalists

Training seminars for journalists registered with the Association of Journalists will continue. A three-part format, combining speeches by people from CONAI and external experts, will be repropounded in various regional branches of the Association of Journalists, after its launch in Palermo for members of the Sicily association in May 2022. A seminar that must be updated and continue to exist, in agreement with the Association, guaranteeing the journalists who attend credits for compulsory training (members of the Association must complete this every three years).

Training for experts on labelling and packaging

Training activities dedicated to the environmental labelling of packaging will continue in order to increase professional skills on these aspects in line with regulatory developments.

Green Jobs training courses

Education on separate waste collection and recycling is an integral part of CONAI's mission, which is why, together with the various packaging recycling chains, it intends to make the experience and know-how developed over 25 years available.

The aim is to contribute to the creation of qualified jobs – Green Jobs – for better and more sustainable waste management, with a focus on areas of the country where new waste management facilities are needed.

Targeted training projects will therefore be implemented in the coming months in strong synergy with universities. The target is mainly young people, both students and recent graduates.

Two new training courses with transfer of technical and regulatory skills in the circular economy to recent graduates in the 25–30 age group are planned for 2022. The Green Jobs course provides useful knowledge on waste management, which is undoubtedly a complex and interdisciplinary subject, through a theoretical part on sector legislation and a more technical part on the world of recycling and the processes for treating materials to give them a new life, with direct testimonials from the CONAI EPR organization and companies operating in the waste treatment sector. The project, which has already been brought to Sicily, Calabria and Basilicata in previous years, has received sponsorship from the MITE.

The first training course of the year ended on 6 May in Campania; the second will be implemented in the second half of the year, most likely still in Campania.

GREEN JOBS - CONAI ACADEMY COMMUNITY GROUP

The Community is the natural place for the creation of a Green Jobs group that can exchange information, including on courses and other activities by CONAI, and at the same time do professional networking, since companies from the sector are present.

CONAI will be able to act as a “showcase” in giving visibility to members, without responsibility for juggling supply and demand. The participants will be the hundreds of young people from the courses organised by CONAI (Green Jobs, Circular South, ENEA, Master, etc.).

Experimental theses in ENEA research centres

The first edition of the 2022 Call for Theses Papers has been organised in partnership with ENEA, through the establishment of degree prizes and the performance of theses at ENEA's research centres in Casaccia (Rome) and Bologna. The topics to be covered in the theses in 2022 concern "decarbonisation strategies of the recycling chain" and the "environmental labelling of packaging". The Call for Papers will be promoted within the network of 41 universities affiliated with ENEA throughout Italy. The publication of 6 theses over 3 years is planned, which at the

end of the 3-year collaboration period with ENEA, will lead to the creation of a series on the two topics of collective interest. Events for the final awarding prizes for these are also planned.

Training and research projects with the University of Tuscia

An agreement was signed with University of Tuscia, which provides for training on eco-design and recycling issues, the exploitation of degree theses, and the co-funding of research of common interest. In March, the Unitus-CONAI prize was announced for the first time, calling for 2 theses on packaging and sustainable management of its life cycle to be completed by November, and the schedule was set (12 May–16 June) for a course of training seminars with testimonials from packaging material consortia and recycling companies, aimed at students in engineering, economics and industrial design courses in the region.

RiEco Master's on waste management and the circular economy

The second semester will see the launch of the first postgraduate scientific and advanced training course with the University of Basilicata, dedicated entirely to recycling and sustainable waste management for a circular economy, sponsored by CONAI.

Once the academic process for the approval of the proposal by the university has been completed, the call for participants will be announced. Master's lectures will be held from September to December and will include internships to be undertaken in companies and within consortia in the first half of 2023.

Circular South

The project was realised in cooperation with Dock3 to encourage design and entrepreneurship in the circular economy, involving around 60 university students and recent graduates from universities in southern Italy. Participants dealt with a challenge every fortnight, with interaction and experimentation in working dynamics, with a view to identifying the most suitable colleagues to start a company together.

The ideas were presented to a panel composed of managers of business incubators and researchers, and was chaired by CONAI, which awarded prizes to the 3 winning teams and opened the door to its channels for supporting the development of the ideas.

The awarding of the winners and some of the teams that will continue their design journey will take place at the Green Symposium in Naples, which will ideally close the circle of the first edition of circular south.

Training courses with Unioncamere

CONAI will develop a new collaboration with Unioncamere to organise a project with the aim of helping encourage environmental compliance and activate virtuous pathways to environmental sustainability for companies in the field of packaging and packaging waste through:

- proper information activities to encourage compliance with the relevant environmental regulations;
- promote product design in line with the new European circular economy strategies;
- carry out studies and surveys of common interest by comparing the environmental data of companies in the packaging chain.

Programme for high schools

The introduction of a new level of information is also being studied for high school or secondary school students, which could focus, for example, on a guidance pathway directing them towards scientific interests, future choices or future professions. Furthermore, the 15–18 age group would lend itself to a level of dissemination and deepening of the theme of waste and recycling, being a target group that is generally not covered by the various communication and training initiatives.

Primary schools - class recycling.

The "Riciclo di classe" (class recycling) programme for primary schools, in partnership with the newspaper Corriere della Sera, promotes the values of separate waste collection and the recycling of packaging materials, in order for the younger generations to acquire sustainable and responsible behaviour with regard to the environment as part of the civics education curriculum. Over the course of the year, 3,000 hard copy teaching kits were distributed to schools and the play "Dipende da noi" (It depends on us) was made available on the website riciclodiclasse.it. In June, the panel will be organised to choose the winners of the 2021–2022 education competition. The prize-giving ceremony at the winning schools will take place in September, at the launch of the new edition of the project. The "Riciclo di classe" project was included in the "Schools Regeneration Plan" on the Ministry of Education (MIUR) platform.

Transparent reporting

Consolidate the reliability of Recycling Objectives

In order to guarantee the robustness of the data reported by CONAI with increasing effectiveness, in the near future we intend to further improve our collaboration with relevant stakeholders, including ISPRA, in order to share our journey and identify possible room of improvement or areas for extension. This is particularly emphasised in light of the changes introduced in the data reporting system.

Sustainability report for non-financial reporting

GER CONAI 2021, currently under development, will be presented at Ecomondo 2022 and will be full of new developments. It will be organised on 3 levels of reporting – Country System, Consortium Management and Organizational Management – and comply with the criteria of the Non-Financial Declaration (Legislative Decree 254/2016) as well as the new GRI standards. It will summarise the consortium's activities over the past 25 years and set new guidelines, including on combatting climate change. The environmental benefits of recycling and recovery activities will, for the first time, be reported on the national total and not exclusively on consortium management. Finally, a special role will be given to the organizational structure with a detailed explanation of the “quote rosa” (“pink quotas”, for the representation of women) and internal policies.

Institutional reporting pursuant to 2005/270/CE

In April 2022, new reporting guidelines were defined by the European Commission pursuant to the updated Decision 2005/270/EC. This guideline has a strategic importance for the harmonisation of the European reporting system, and introduces important new factors compared to previous versions, as it introduces for the first time explicit references to the calculation method for organic recycling of biodegradable and compostable plastic packaging and chemical recycling. The guideline is “retroactive” in that the calculation methods involved are already applied in the 2020 data report that each member state must send to Eurostat by June 2022. This is particularly relevant as there are undoubted technical difficulties in reconstructing some of the factors to be considered in the calculations a posteriori.

CONAI was involved by ISPRA in a number of preparatory discussion for the initial reporting of data and consequently became the promoter of a discussion panel with the packaging material consortia and in particular, with the various EPR schemes in the plastics sector, which appears

to be the one that is most affected by the changes introduced with reference to the measuring point of recycling data. This was done in order to define a common approach with respect to this initial representation of the 2020 data with the new calculation method already applied, and to define the possible actions to be promoted in view of the next reports accordingly, in terms of studies, surveys and additional analyses to support the quality of the data provided.

Reporting activities

This section describes the reporting plan for the activities that will be implemented in the course of 2022, in continuity with the three-year plan, and the activities concerning media relations.

Reporting plan

The plan was developed in line with the strategic approach, and reference objectives and targets defined last year.

CONAI continues to position itself as an influential player in the circular economy, taking advantage of unique and distinctive elements such as "being the point of contact between the public and private sectors" (collaborative system), collecting and disseminating best practices, contributing to the debate on the role of an industrial development policy in support of recycling, implementing CONAI's role as support for areas lagging, creating a culture of separate waste collection and recycling, with the help of local projects (support for local communication), emphasising the role of guarantor in the achievement of targets at national level and the economic impacts on regions, environmental and social impacts, and creating a culture on the issues of quality separate waste collection, recycling and the circular economy.

COMPANY TARGETS

CONAI Academy

Webinars

Like last year, about ten webinars are planned, which will provide an opportunity to meet and exchange views with the consortium member companies and associations. The first appointment of the year was dedicated to the new CONAI Guide to Environmental Contribution 2022, followed by an appointment to launch the new ANCI-CONAI Local Communication Call,

then the topics of fee modulation, environmental labelling and the SUP directive, etc. will be covered.

For these new editions, the graphics of the videos, the virtual stage and the video content were redesigned.

Community

The Conai Academy platform was officially opened to companies on 2 December 2021. during a webinar dedicated to the topic of labelling (Connex Confindustria, Milan).

To date, there are over 4,000 registered subscribers and the average number of active users per day is 70–80. There are currently 20 different topics available on the platform, with 230 posts published.

It is planned to enrich the community with new columns: editorial focus, news, in-depth discussions with experts on packaging studies and related topics.

In addition, there will be a dedicated LinkedIn activity with a communication campaign to engage new users.

Publishing partnerships

Award Ceremony CONAI – Corriere della Sera The Economy of the Future

Two days of live and digitally live-streamed events will be organised in November from the Milan Triennale with round tables, interviews, debates and an editorial focus dedicated to the circular economy, with the involvement of international experts and companies. The event will include a discussion dedicated to the 2022 Bando Conai per l'Eco-design degli imballaggi attended by the winning companies. On the day, the

“Pensare Circolare” (think circular) prevention dossier will be presented. In continuation of the project carried out with Corriere Economia, a book dedicated to the sustainability of packaging will be produced, based on a survey of companies that are users and producers of packaging, linking their circular economy strategies and interventions with low-carbon strategies.

Eco-design Call cases exploited in the region – The Italian Economy of the Economy of Corriere della Sera.

The tour of the economy by Corriere della Sera through SMEs involving local institutions and companies has continued in 2022. Eleven events in regional stages with 1 hour of debates, interviews and talks, both live and streamed on Corriere.it. A company nominated by Conai, winner of the Eco-design Call, attends each meeting.

Green&Blue

The sustainability project provides a single container to give visibility to the theme of eco-design, prevention and sustainability, the results of the CONAI EPR organization on Repubblica, Affari & Finanza (Business & Finance), La Stampa and on Green&Blue's digital hub.

Tools such as focuses, guides, native articles, etc. will be developed in the second half of the year.

Noi per Voi – Radio 24

The media partnership involves the broadcasting in November of radio broadcast “pills” which had the task of explaining the functioning of the CONAI System and the packaging material consortia, the environmental contribution, the results achieved and the main ways to join the consortium.

Ipack Ima

The international event dedicated to the packaging chain is back: from process to packaging, from design to innovative packaging materials, etc., and from labelling to end-of-line.

Held in Milan from 3 to 6 May at the Fiera di Rho an institution stand was set up with the help of the packaging material consortia (160 m2., Block 5). Within the area dedicated to sustainability, a programme of events and meetings took place, including the Best Packaging award ceremony, this year dedicated to the environment, and then the conclusion of the PoliDesign “Material Matters” project with the involvement of students who developed iconic objects in recycled material for Conai.

TARGET CITIZENS

Planet 2030

Corriere della Sera returns with a survey on sustainability issues, as well as an event on 5 June, World Environment Day, in partnership with CONAI.

There will be a live and digital event from the Sala Buzzati with journalists from Corriere della Sera, guests and testimonials, with a talk by the Consortium on the circular economy and a discussion of extended producer responsibility systems in Europe.

Partnership with Last Minute Market

The participation in the Waste Watcher Observatory to investigate the role of packaging in the prevention of waste and the preservation of the safety of food products (focus on Italy, France,

Spain, England and Germany). Work during the year will focus on the results of surveys conducted with IPSOS.

Ecomondo (8-11 November)

The Rimini trade fair remains a must for continuing to position the EPR organization as a player in the circular economy at national level. This year's fair will celebrate 25 years as Conai, and a series of activities will be held, including the awarding of the “Young Environmental Journalism Award”, also sponsored by the Association of Journalists and the MiTE. The new Sustainability Report will also be presented, with a webinar broadcast from the stand and organised by Ricicla TV, and the winning capsule collection of the call to action “The Upcycling Challenge” promoted with Vogue. Finally, the media partnership with Radio 24 and Radio Rai was established.

Meeting in Rimini

At the Rimini Fair (20-25 August) a programme of conferences will be held, to be followed live, as well as streamed online. Given the large turnout of families, the idea is to also bring in children's theatre by organising a few performances of the show “Dipende da noi” (It depends on us), the focus of the Conai school project “Class Recycling”, within the Meeting.

The organization of topical exhibitions is also one of the main forms of communication used by the Meeting and represents an opportunity to find a container with a high public turnout that the “Renaissance for the Environment” exhibition can be brought to.

Green Med Symposium

The second edition of the Green Med Symposium sponsored by CONAI will be held in Naples from 8–10 June. The project's mission is to inform and educate citizens, students and professionals on the possibilities offered by innovation and research in the field of environmentally friendly technologies.

Meetings and conferences open to the public dedicated to the PNRR, sustainability, circular economy, decarbonisation, innovation, training and the development of the south of Italy will be organised together with Conai. An event will be organised involving the universities in the Green Jobs circuit and the MIUR, which will aim to enhance the skills development activities put in place by CONAI. There will also be an exhibition area reserved for local and foreign companies, in partnership with Ecomondo.

Il Tempo delle Donne (Women's Times) – sustainability prize for women

Attendance is confirmed for the live digital event from 9–11 September, dedicated to society and culture. Surveys, conversations, interviews, workshops over four days, organised at the Milan Triennale. Starting with a survey on women and sustainability and how green jobs represent an opportunity for them and for Italy, with the organization of an award dedicated to 10 women who have distinguished themselves over the years for working in support of the circular economy and ecological transition.

Trento Festival

The Trento Festival of the Economy will be held from 2 to 5 June, and will involve the most significant points of the city. Title: “Order and chaos after the pandemic”, with physical and hybrid event format. Over the course of the four days, there will be a line-up on topics related to land, green economy, innovation and development, environment and soil, infrastructure, construction, transport, energy, waste, with a talk given by CONAI.

Museum E for Environment

Collaboration was initiated with the Museum of Turin (A come Ambiente [“E for Environment”]) on a project to refurbish the floor dedicated to the topic of waste/resources, with the launch of 2 lines of research and design at the Milan and Turin Polytechnics, respectively, with Master's degree students of Interior & Spatial Design and Virtual Design.

ANCI general meeting

Scheduled for late October/early November is the regular appointment to attend the next meeting of the National Association of Italian Municipalities in Genoa, with a plenary speech and the presence of the Conai stand. In addition, the topical seminar “From the ANCI-CONAI Framework Programme Agreement to the Sector Agreement” will be organised in a mixed format, merging digital and physical experience.

“Save a bag” campaign

The new version, with the integration and coordination of the Consortia, of the communication campaign for the correct disposal of bioplastic packaging was finalised. The campaign will be planned again over the year with the cooperation of FederDistribuzione, Fida and Confcommercio, establishing the use of web and social media, and point-of-sale materials for large-scale retailers.

25 YEARS OF CONAI PLAN



The celebration of these 25 years **is not to be seen** as a “mere recurrence”, but rather as a **testimony and development of an ongoing and anticipatory commitment to a need** that today arises in all its importance and urgency.

The very full schedule of activities is intended to confirm how much the Conai structure has proved itself to be **solid forward-thinking** on the circular economy in Italy.

The plan is targeted at institutions, companies, citizens, stakeholders and the media.

Launch event

In Rome, the launch event “The History and Role in the Ecological Transition of the System - Conai and the Consortia Meet the Institutions” was held on 28 March at the Chamber of Deputies, and lasted about 3 hours. The chair of CONAI and the Chair of the Consortia spoke in the presence of the MITE and the MISE. For the occasion, a survey on sustainability scenarios and how Italy has changed in the last five years was presented by IPSOS.

The tools

Book “25”

A book with a didactic slant will be produced, tracing the history of CONAI through its activities and the main projects and campaigns carried out over time, which will have as its main theme the changes in Italy as it moves towards sustainability and the circular economy. The book will also include a series of interviews with testimonials from the worlds of the environment, sociology and journalism, as well as a collection of all the communication campaigns carried out over 25 years by Conai, but also by the packaging material consortia.

The Manual

An academic textbook is being prepared, which will become a study and training tool for students of science and technology faculties (engineering, science, etc.) but also for faculties such as economics and law.

It will focus on interdisciplinary topics related to recycling, to serve as preparation for the world of work where more and more across-the-board knowledge is required, especially in the circular economy. It will be published by Franco Angeli and will contain contributions from experts from the academic world as well as being written by Conai. Channels for promotion have been identified such as CONAI training courses for students (Green Jobs,

Conai Masters, etc.), university courses in technical and scientific as well as economic and legal faculties, as well as managers and consultants interested in learning more about the circular economy.

Documentary

A documentary will be made, accompanied by specially recorded interviews, with CONAI and other archive/repository material. Through the voices of some of the protagonists from Conai's history, the journey will be told through interviews and video interviews: e.g. the role of mayors in helping areas that are lagging, how the future is being imagined and what we think the role of CONAI will be, etc.

Journalism prize "Fenice CONAI for young environmental journalists"

CONAI organises the first contest open to journalists aged 40 and under who have produced a written article and a radio or television broadcast with issues related to the circular economy and recycling as the main focus during the last year. Both categories (written and audiovisual) will have an overall winner, who will be awarded a CONAI statuette. With sponsorship from the Association of Journalists and the MiTE, and the partnership of Ecomondo. The winners will be awarded the prizes in Rimini on the dates of the trade fair.

The website (virtual historical archive)

A mini institutional CONAI website will be set with a focus around a 25-year perspective, creating graphics and ad hoc sections on in-depth analyses, as well as a navigable historical archive with all CONAI materials and documents of interest to the various stakeholders. The new image of the 25th anniversary site will also be accompanied by a timeline marking the most significant moments experienced by the Consortium and Italy over the past 25 years.

Environmental Renaissance exhibition

The photographic exhibition "Renaissance for the Environment" will be put on, curated by art critic Nicolas Ballario. Fourteen short videos commenting portraits of the 7 packaging materials, balancing historic reconstruction, irony and an invitation to protect the planet. The vernissage was planned for the occasion of the 2022 Meeting in Rimini (18 to 23 August). It will be preceded by a teaser campaign on the CONAI social media channels. The exhibition will tour and new contexts and public occasions for visibility will be found.

Brussels institutional event

An event is scheduled for the end of May to present the results of the Conai System in Italy and the benchmark study of EPR schemes in Europe, at the European Parliament, with MEPs and European officials present, including the Hon. Simona Bonafè.

Creation of social media contents in conjunction with Giffoni Innovation Hub and Academy

CONAI and the Consortia agreed to participate in the first edition of Verde Giffoni (27–30 April), the Festival's new project dedicated to sustainability and protecting the Planet and aimed at Generation Z. The second stage of the course is being prepared, which will end with the production of Instant-Movies to be exploited through social media channels. The presentation and award ceremony will be held during the Giffoni Film Festival 2022.

Innovation Summit + Recycling Art (17 and 18 May - Palazzo Taverna)

A two-day programme featured a series of discussions, conferences and workshops on innovation and sustainability, as well as a contemporary art exhibition. CONAI's Circular Art exhibition presented a series of works where the materials used and the issues addressed actually represent possible solutions to propose new creative forms related to the challenges of the future. In addition to the exhibition, CONAI's support for upcoming artists will take shape through the CONAI Prize, which will involve the purchase by the Consortium of one of the works exhibited, selected by a special panel, and which best meets the criteria of innovation and sustainability.

Press relations

Media relations activities will continue with the main objective of accrediting the Consortium as an influential player in the circular economy.

In particular, efforts should be concentrated on transforming CONAI into a reliable contact for all issues and topics related to the world of sustainability and ecological transition, so that it is not only a “supplier” of data and numbers, but also a player capable of indicating trends and providing insights into how to interpret ongoing changes.

Visibility is always important, but so must corporate reputation and the ability to govern media agendas be, as far as possible. This is a difficult path that it is important to try to take, and one that is already beginning to move forward with, for example, by making the summer a time to talk about recycling, when the new PGP data is available to the press and media.

The recognisability of spokespersons, of which there have been five for some time now, will have to be consolidated and become one of the tools of visibility. The media often look not only for authoritative opinions, but also for figures who are able to represent an element of authority in themselves because of their role in an organization.

More and more opportunities will have to be dedicated to journalists if the gradual exit from the state of health emergency continues.

Meetings to let the press get to know CONAI will have to become more frequent, as well as educational trips for journalists to visit treatment and recycling facilities, which will hopefully be scheduled on more than one occasion.

Media relations on local issues and results should also be strengthened. CONAI's presence in local media is not only an excellent way to convey data, but also proof of proximity to local businesses and municipalities. These are activities that should become more frequent and systematic.

The Fenice CONAI young environmental journalists' prize promoted by the Consortium was created in 2022. A call to award a radio or television broadcast and article with environmental sustainability, recycling and ecological transition as main themes, signed only by journalists under the age of forty-one. The call-to-action is reserved for all journalistic productions that appear between 22 April 2021 and 21 April 2022: the deadline is Earth Day, which is celebrated every year on 22 April. Sponsored by the Ministry of Ecological Transition and the Association of Journalists, Ecomondo is the main partner of the award. The two Fenice prizes, that for the article and that for the radio/television broadcast, will be presented at Ecomondo 2022. The winners will be chosen by a panel consisting of representatives from journalism and institutions.

An award that seeks to become annual to support young journalists, enhancing their work in the field of information related to the circular economy.

In agreement with the press office, social media will also be aimed not only at broadening the fan base, but also at conveying information and advice to make CONAI a reliable point of contact for citizens. In particular, the re-launch of the YouTube channel will continue, not only as a bank of audiovisual documents, but especially as a means of expanding the audience demographic reached via the web.

6. Recycling and recovery forecasts 2022–2026

The forecasts and the main supply chain operational data are presented below.

The quantitative information below is prepared on the basis of what has been reported by the packaging material consortia and recognised Self-compliance EPR organizations in their May 2022 plans, and is presented in quantitative terms for the three-year period, and purely qualitative for the following two-year period.

By going into more detail with regard to numbers, as expected, what is reported is strongly conditioned by the context in which the projections were determined. It is important to stress that five-year forecasts are now more than ever characterised by randomness and uncertainty given the simultaneous occurrence of a number of situations that are developing and ongoing, first and foremost:

- European and national regulatory developments;
- Review of the essential requirements for packaging, which may lead to changes on the issue of packaging designs and thus on the expected evolution on what is put on the market.
- The effects of the transposition of the “Single-use Plastic” Directive on both the packaging material choices made by companies and the measures that can be developed to comply with the targets laid down in this regulation – for example, in terms of PET bottle collection and the minimum content of recycling material in bottles;
- Management of the transition from the ANCI-CONAI Framework Agreement to the ANCI-CONAI Framework Programme Agreement with sector technical annexes;
- Current technological evolution, especially to develop upstream and downstream packaging solutions that are increasingly recyclable and have a recycled content.

6.1 Packaging put on the market

Specifically, from the evaluations provided by Prometeia³⁶ to CONAI and which have been made available to the packaging material consortia, a developing scenario emerges of the total

³⁶ Since 2014, CONAI has been collaborating with Prometeia to define a statistical and econometric method developed by Prometeia itself and aimed at forecasting the rate of change in the packaging put on the market by material, relating it to data on the developments in the consumer market over the years and the dynamics of production levels destined for the domestic market (total production – exports) and the dynamics of the quantities imported by the packaging user and/or importer micro-sectors monitored by the research organization. The basic idea behind the model is to estimate the packaging put on the market

packaging put on the market, which was profoundly changed by the health crisis and is recovering well, and is expected to lead to approximately 15 million tonnes of packaging put on the market by 2024. It therefore appears to be a reversal of the trend showing a contraction linked to the marked decrease in 2020 and the partial recovery from 2021.

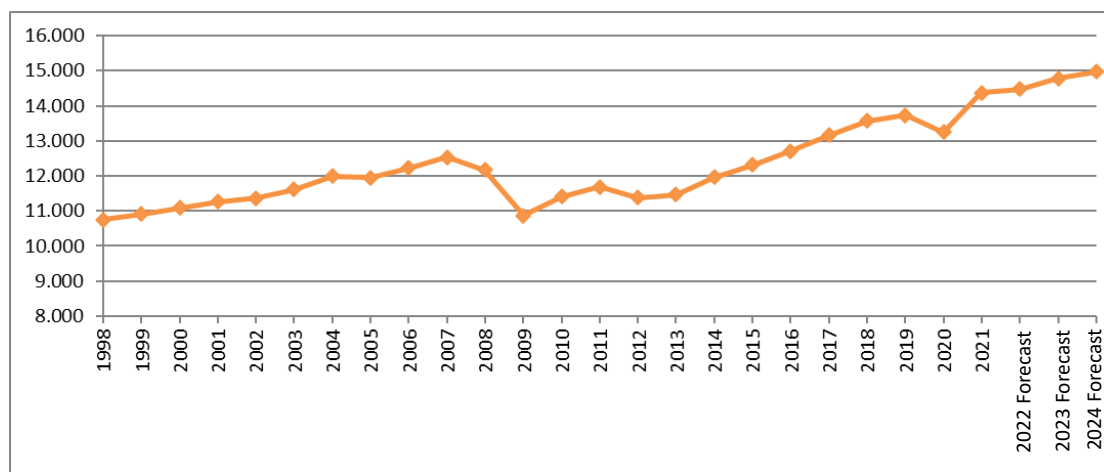
Forecasts for packaging put on the market

	2021	2022 Forecast	2023 Forecast	2024 Forecast
MATERIAL	Ktonnes	Ktonnes	Ktonnes	Ktonnes
STEEL	542	520	523	526
ALUMINIUM	78	75	75	76
PAPER	5,243	5,306	5,508	5,623
WOOD	3,394	3,394	3,394	3,394
PLASTICS and BIOPLASTICS	2,274	2,280	2,322	2,342
GLASS	2,850	2,901	2,956	3,018
TOTAL	14,381	14,476	14,778	14,978

Source: CONAI–Packaging material consortia

Below is the development of the packaging put on the market up to the three-year forecast period in question, from which the rebound of 2021 is clear, followed by an essentially linear growth rate in the following years.

Evolution of packaging put on the market



Source: CONAI

from the supply side. The statistical model used is the fixed effects panel data model. The model returns a margin of variability of the data on packaging put on the market from the individual supply chains and overall.

6.2 Recycling

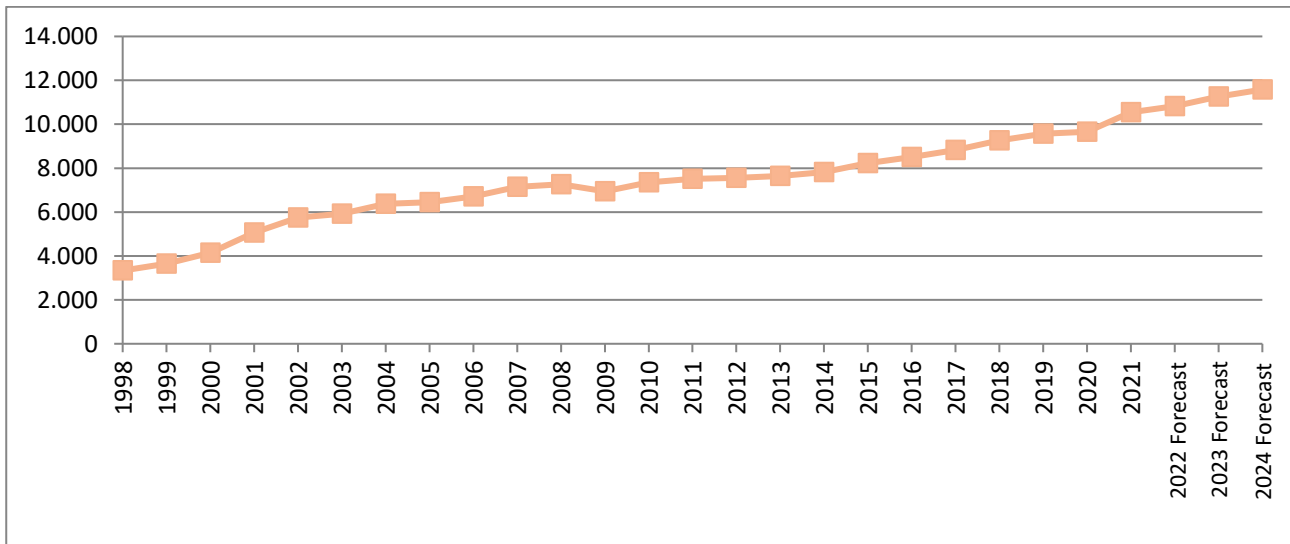
Forecasts for the three-year period 2022–2024 on the quantities of packaging waste sent to recycling estimate a substantial growth in recycling performance. Specifically, almost 11.6 tonnes of packaging waste is predicted to be sent to recycling in 2024, with a rate of 77.3%, which has been growing over the years.

Recycling forecasts

	2021	2022 Forecast	2023 Forecast	2024 Forecast
MATERIAL	Ktonnes	Ktonnes	Ktonnes	Ktonnes
STEEL	390	398	405	409
ALUMINIUM	53	53	54	55
PAPER	4,460	4,536	4,731	4,854
WOOD	2,198	2,182	2,204	2,226
PLASTICS and BIOPLASTICS	1,264	1,358	1,421	1,466
Of which BIOPLASTIC	38.4	43.1	47.4	51.6
GLASS	2,183	2,291	2,447	2,571
TOTAL	10,548	10,819	11,262	11,580

Source: CONAI

Trends in packaging waste sent to and planned for recycling



Source: CONAI

Forecast percentages of recycling of packaging put on the market

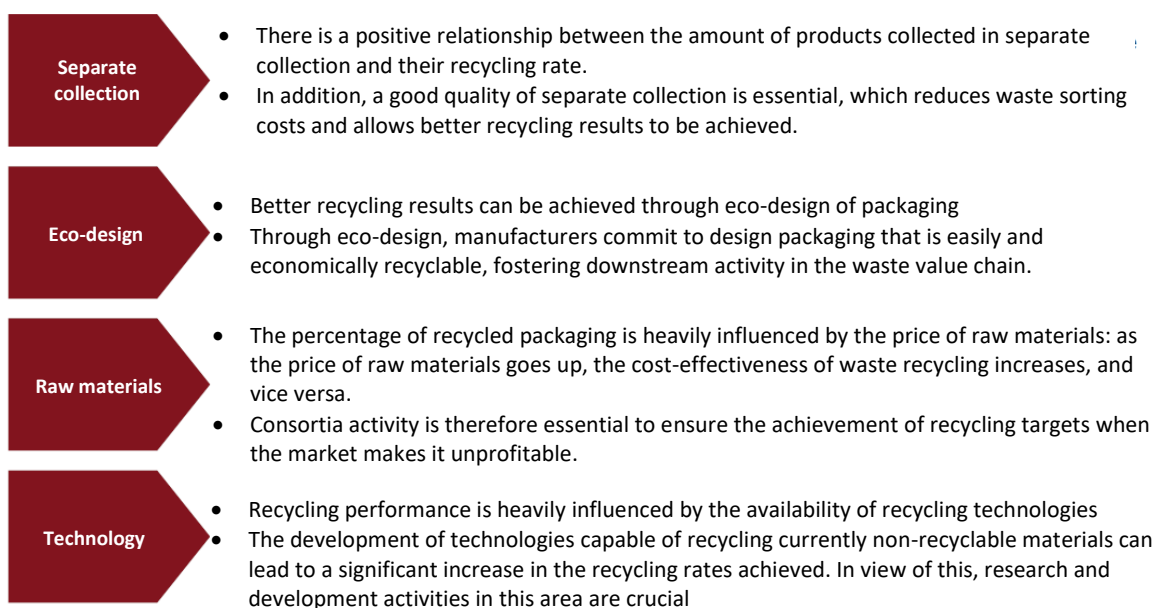
	2021	2022 Forecast	2023 Forecast	2024 Forecast
MATERIAL	%	%	%	%
STEEL	71.9%	76.5%	77.4%	77.8%
ALUMINIUM	67.5%	70.9%	72.0%	72.5%
PAPER	85.1%	85.5%	85.9%	86.3%
WOOD	64.7%	64.3%	64.9%	65.6%
PLASTICS AND BIOPLASTICS	55.6%	59.6%	61.2%	62.6%
GLASS	76.6%	79.0%	82.8%	85.2%
TOTAL	73.3%	74.7%	76.2%	77.3%

Source: CONAI

It should be stressed that these expected results are calculated using the current method of calculation of recycling targets for comparison with the targets currently in force, and will therefore necessarily have to be updated in the next institutional documents also in view of the implications of the new reporting method and according to the calculation procedures that will be shared with the various stakeholders. As a general rule, these forecasts, which end in 2024, the last year before the new 2025 targets, seem to present a national packaging recycling system capable of exceeding the minimum benchmarks set for 2025.

The expected results may also be positively affected by the expected industrial achievements in chemical recycling (plastic to plastic), which could lead to an improvement in the recycling rate for plastic packaging which is currently more difficult to manage, as well as by any further technological and/or organizational innovations that may be developed over the next few years, also considering the advent of Biorepack, and by the interventions that will be planned to achieve the SUP targets, which will certainly make a further contribution to the quantities recycled (ref. Chapter 7).

Main factors affecting packaging waste recycling



The forecasts described above on the quantities sent to recycling take into account the expected evolution of the collection of packaging waste from the household stream managed under ANCI-CONAI Framework Agreement. These forecasts were made by the packaging material consortia, taking into account their own promotion of waste collection and contracting activities in the area, but also the market trend for second raw materials, with clearly particular reference to those materials that have favourable market conditions, and also taking into account the historical datasets in their possession. all with an approach of continued respect of the current arrangement, which will indeed see important and in some cases profound changes due to the definition of the new Framework Programme Agreement.

Expected evolution of ANCI-CONAI deliveries

MATERIAL	2022	2023	2024
STEEL	198	200	206
ALUMINIUM	18.4	19.2	19.5
PAPER	n.d.	n.d.	n.d.
WOOD	n.d.	n.d.	n.d.
PLASTIC	1,309	1,329	1,349
GLASS	2,262	2,443	2,588
TOTAL	3,787	3,991	4,163

Source: CONAI-Packaging material consortia

The estimated quantities delivered under agreement to the packaging material consortia in the three-year period 2022–2024 show trends of steady, albeit limited, growth.

Data relating to paper and cardboard and wood packaging waste were not returned by the respective supply chains. As regards the latter, it is not possible to make a prediction in view of the fact that negotiations on the renewal of the Technical Annex for wood packaging have not yet been concluded. As far as the paper and cardboard packaging chain is concerned, the lack of forecast data on deliveries is instead attributable to the possibility for contracted parties to periodically modify the quantities delivered to the Consortium, taking advantage of the six-monthly windows, due to the extreme fluctuation of the market value of raw material.

In general, the data confirm the crucial role of the EPR organization in the growth of materials collected and sent to recycling, as a fundamental contribution to the consolidation of recycling targets as well as to their achievement in the plastic packaging chain where, alongside the traditional recycling targets, there are those imposed by the SUP.

Energy recovery

Over the coming years, CONAI intends to proceed with the introduction of a second session of product analyses also for incineration plants, as was done in 2021 with alternative fuel production plants.

In order to support the collection and management of product analysis data, a dedicated computer platform will also be set up in 2022, which will enable appointed companies to provide their reports immediately and at the same time verify their correctness. At the analysis stage, the computer tool will then facilitate the processing of the data collected overall.

Finally, collaboration with the relevant packaging material consortia (Cial and Ricrea) is to be resumed in the near future to collect the data needed to determine the recovery of metal packaging from post-combustion waste, and to appoint a university institute to conduct a study on the data collected over more than twenty years by Conai on energy recovery.

Total recovery

Despite the fact that there will no longer be overall recovery targets, CONAI intends to continue to report and monitor these streams in order to also be able to certify the contribution of the various supply chains to the reduction of disposal to landfill.

Based on the information available, forecasts for the three-year period 2022–2024 of the quantities of packaging waste for overall recovery lead to an estimate of a figure set to rise substantially in 2022–23 and then stabilise in 2024 at more than 83% of the packaging put on the market.

Overall recovery forecasts

	2021	2022 Forecast	2023 Forecast	2024 Forecast
MATERIAL	Ktonnes	Ktonnes	Ktonnes	Ktonnes
Packaging waste sent to recycling as a total (Ktonnes)	11,880	12,061	12,363	12,519
Total recycling of packaging put on the market (%)	82.6%	83.3%	83.7%	83.6%

Source: CONAI

As far as forecasts for 2025–2026 are concerned, it is understood that these are very difficult projections to make, since they are linked to multiple factors, including ones that are external to CONAI and to the EPR schemes in general. That said, this will be the first year (2025) of verification with respect to the new targets of the circular economy package, with the full application of the new calculation methods.

Forecasts and assumptions currently possible relating to the impact of the new calculation method (see the box on the Final General Report) on the recycling results expected for 2025–26 by the Packaging Material Consortia and the Self-compliance EPR organizations, we can reasonably state that all chains will exceed 2025 targets and that we will be close to, perhaps even achieve, 2030 targets.

In fact, we expect that the total actual recycling by 2025 will be 76.6% of what is put on the market and will cover almost 11.6 million tonnes.

This leads us to believe that, even if the assessments made to date on the impact of the new calculation methods turn out to be more restrictive, the 2025 recycling targets would still be achieved.

Material	Preliminary estimation % recycling 2025
STEEL	78.9%
ALUMINIUM	73.0%
PAPER	86.7%
WOOD	66.0%
PLASTICS AND BIOPLASTICS	54.8%
GLASS	85.6%
TOTAL	76.6%

2025 objectives	2030 objectives
70%	80%
50%	60%
75%	85%
25%	30%
50%	55%
70%	75%
65%	70%

There are also numerous contextual factors that can change the assumed scenario, especially long term.

The growth in separate waste collection in the most lagging areas is a trend that we certainly hope will continue at a high rate to make up for the discrepancy that has built up. However, if it is not followed by an increasing treatment capacity for the materials intercepted and a more widespread and homogeneous presence of plants throughout the country, there is a risk of failing to close the circle at a national level; therefore, the role of local planning in the light of the new PNGR will be crucial. Hence the growing interest that CONAI has on this issue in light of the PNGR.

Another central aspect concerns the spread of new plants and new technologies that would also need an incentive for investment through typical public finance drivers (e.g. tax credit).

Then there is the possible boost from interventions, including legislative ones, to help grow the national recycling market, like that of the development of the demand for recycling material at national level. This includes work on the definition of new CAM (Minimum Environmental Criteria) for the promotion of green procurement demand by public administrations. CAMs are in fact a valid support for the development of the market for recycled materials from municipal

waste collection, but their concrete application is still in flux. For a greater incentive, it would be necessary to extend the number of categories of goods and services affected by their application and then to verify their concrete implementation.

At the same time, a central role can also be played by the development of the demand for private reproductions, for which, in addition to considering imposing minimum recycled content in certain products/goods, it would be worthwhile introducing ecotaxation, which can make such solutions more attractive to the end consumer as well.

In closing, it is also worth mentioning another area of intervention that is particularly relevant for the recycling sector, namely the End Of Waste decrees, which may be a concrete opportunity for simplification for the sector, but which often risk becoming an additional burden for companies.

7. Towards SUP targets

The transposition of the SUP directive places important new targets on packaging EPR schemes. CONAI acts as coordinator and planner for the action needed to ensure that these targets, too, are achieved in time, effectively and efficiently for packaging manufacturers and users and supporting the national institutions.

The targets to be achieved are quantitative, and therefore the definition and sharing of the relevant calculation methods will be fundamental on this typology, and also qualitative, with different moments of activation and verification.

Type	Target	Description	Implementation Timeline
Quantitative	Consumption reductions	<ul style="list-style-type: none"> Reducing the consumption of certain single-use plastics (e.g. cups, food containers) 	EU implementing decision 2022/162 set out the calculation methods
	CPL ² collection	<ul style="list-style-type: none"> Definition of the rates of collection of CPL² (in 2025 and 2029)³ 	
	Specific planning requisites	<ul style="list-style-type: none"> Definition of the portion of recycled material for PET bottles (in 2025 and in 2030) 	
Qualitative	Awareness raising measures	<ul style="list-style-type: none"> Informing consumers and incentivising them Implementing measures proportionate to the target 	n.a.
	Littering	<ul style="list-style-type: none"> Reducing dumping of waste on public land: a focus on beach and marine littering (fishing equipment) 	
	Market bans	<ul style="list-style-type: none"> Ban on the placement of certain single-use plastics (e.g. plates and expanded polystyrene containers) on the market 	
	Post-consumption management requisites	<ul style="list-style-type: none"> Endorsement of EPR schemes⁴ to cover costs relating to the restricted items 	
	Specific planning requisites	<ul style="list-style-type: none"> Beverage containers³ in plastic placed on the market only if caps and lids remain attached to their containers 	
	Marking requisites	<ul style="list-style-type: none"> Presence of marking (on products and/or packaging) supplying information on waste management methods 	

Analysis of the strategic impacts of the European Directive on Single Use Plastic Strategy&

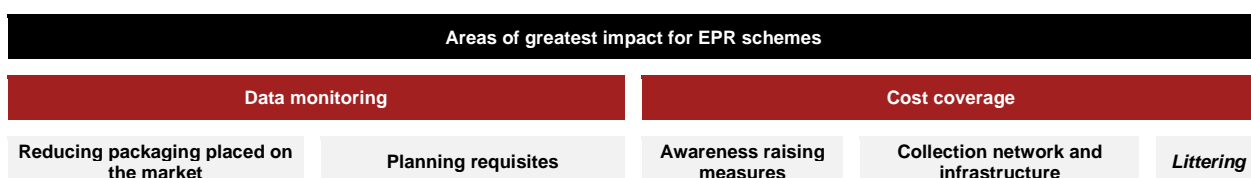
1) SUP: Single Use Plastic; 2) CPL: Containers for liquids; 3) Limited to containers with up to 3 litres of capacity; 4) EPR: Extended Producer Responsibility; Source: SUP directive 1 (2019/904), analysis PwC Strategy&

With regard to the targets, it should be noted that, for the packaging part, the areas of greatest impact for EPR schemes are related to the ability to monitor and verify data and to the issue of cost coverage, which, compared to the traditional coverage provided for extended producer responsibility schemes, explicitly extends to littering and some specific awareness-raising activities.

Article 8 of the SUP Directive requires producers to ensure that the costs incurred for waste collection, including infrastructure and its operation, transport and processing, are covered in proportion to the weight of the plastic component in relation to the product. The term “infrastructure” stated in the Directive is a very broad concept, which generates 2 main points of focus for Conai:

1. The directive provides for the creation and provision of specific infrastructures, such as special containers in places where waste is habitually thrown (e.g. places with high pedestrian traffic);
2. Section II of the PNRR also refers to infrastructure investments for the improvement of the separate collection network and the construction of innovative facilities for the management of particular waste streams.

A preliminary assessment therefore shows that the existing EPR schemes whose coordination CONAI will in particular have to promote to guarantee national targets are the Corepla Consortium, CORIPET and BIOREPACK. To this end, discussion panels will be set up precisely to systematise the activities that the various stakeholders intend to undertake in this area.



The EPR schemes most affected and impacted by the transposition of the SUP are:



Among the objectives that require adequate planning and coordination, also due to the consequences at the level of strategic choices that follow, is that of the growing minimum collection rate for recycling of PET bottles under 3 litres: from 77% in 2025 to 90% in 2029.

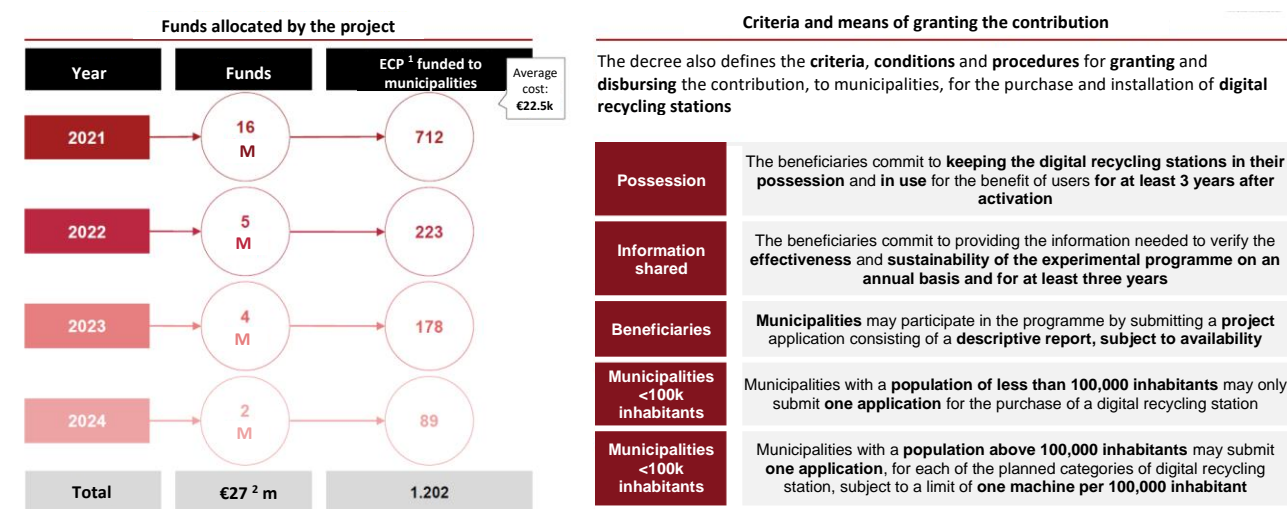
This implies an initial check of the state of the art and current trends in order to construct scenarios to help evaluate whether we are already in line with these forecasts, or whether supplementary or even structural interventions need to be defined.

To this end, on the basis of the information available in the PSPs of the two EPR schemes involved, CONAI and CORIPET, CONAI has developed some preliminary analyses, with the support of PWC Strategy&, assuming a scenario of expected evolution of PET bottles put on the market, the relative market shares between the two EPRs and the prospective evolution of traditional SC and selective SC, at a reasonable rate without further intervention.

These analyses would show that the 2025 target is achievable, but that in order to ensure 90 per cent collection of PET bottles by 2029, additional measures are needed.

The gap to be bridged by 2029 varies, depending on the assumptions one chooses on the expected evolution of PET bottles released for consumption and of traditional and selective SC via digital recycling stations (considering those already being installed/financed), but the most plausible scenario is one that leads to a gap of about 100 kt to be intercepted additionally by 2029 (varying from 60 to 140 kt)

This gap is reduced by about 10 kt, considering the effect of the funding that MITE has allocated, amounting to €27m, to support municipalities in investing in digital recycling stations, payable in the period 2021-2024, within the “Plastic-eaters” project (MITE Decree No. 243/2021).



The contribution that these funds could make to the SUP target of PET bottle collection was derived from this analysis, considering them to be fully incremental with respect to the current interception methods, and thus arriving at an estimate of about 10 kts, assuming an average capacity of 650 kg per month per digital recycling station.

In order to close the collection gap for bottle recycling through supplementary interventions on the supporting infrastructure, various options were mapped and cross-referenced against a number of efficacy parameters that identify whether the proposed infrastructure enables sorting and pressing of material, offers a consumer reward, and how mature it is on a national level, or scalable (reproducible on a large scale). From the combination of these parameters, we then derived a hypothetical degree of attractiveness of the different options.

Infrastructure for collection - Possible solutions

Parameters for effective evaluation				Sorting technology	Pressing technology	Consumer rewards	National maturity	Scalability	Attractiveness	
Scope	Type	Infrastructure	Description							
Mechanisms developed nationally	A	SC ¹	CCR ²	Eco-islands for temporary depositing	X	✓	✓	✓	✓	High
			Street bins	Pickers	X	X	X	✓	✓	Low
		PAP ³	Door-to-door collection	X	X	X	✓	✓	Low	
	B	RS ⁴	ECP ⁵	Automated machines for collection and pressing	✓	✓	✓	✓	✓	High
			Manual	Manual collection	X	X	✓	≈	✓	Low
	C	Collection with Deposit Refund System (DRS ⁶)	Organised	"Empty for filling"	X	X	✓	≈	✓	Low
			Manual	Manual return	X	X	✓	≈	✓	Low
Additional mechanisms developed abroad	D	1 integrated with special waste ⁴	RVM ⁷	Automated machines for collection	X	X	✓	≈	X	Low
			RVM ⁷ + Press	Automated machines for collection and pressing	✓	X	✓	≈	X	Low
		SC ¹ + RS ⁴	Traditional pickers integrated with sorting technology for return	✓	✓	✓	≈	X	Low	

Analysis of the strategic impacts of the European Directive on Single Use Plastic Strategy & Notes: 1) SC: Separate collection; 2) CCRs Municipal collection centres; 3) PAP: Door-to-door collection; 4) RS: Selective Collection; 5) Digital recycling stations; 6) Deposit Return System; 7) RVM: Reverse Vending Machine. Source: Analyses by PwC Strategy&

✓ Present ≈ Not present but implementable X Not present
 ● High ○ Low

With regard to the different infrastructure solutions, there are two “opposing” paths that can be taken:

- **Supplementing the separate collection model with a selective collection specifically for PET bottles.** This route implies the confirmation of the current separate collection model to be enhanced for PET bottles under 3 litres, also with selective collection infrastructures – **Selective collection model supplementary to the current one, the implementation cost of which is di more than 10 times lower than the DRS**, with only the missing part to achieve the 2029 target (estimated at about 100 kt) having to be intercepted.

In this scenario, it will therefore be necessary for EPR schemes and local authorities to define targeted investments in one or more of the existing selective collection infrastructures, which would be alongside the fees already paid by EPR schemes to local authorities, in continuity and coordination with what already exists at the national level;

- **Introduce a recycling deposit on PET bottles under 3 litres – Deposit Refund System (DRS) model to replace the current one**, as it is not possible to limit it only to the missing part to achieve the SUP targets, but a parallel model must be implemented for all PET bottles under 3 litres (about 500 thousand tonnes) put on the market, leaving separate collection for all other packaging waste, including plastic. Deposit Refund o Return Systems (DRS) are already in place in some European countries, where consumers pays a deposit in advance on the purchase of the product which is returned to them when the empty packaging is

returned to the manufacturer via the point of sale. This model would be a replacement for the current one, with implementation time, infrastructure, governance and costs all additional to the current model and reserved for the fraction of PET bottles subject to the SUP, as all the rest of traditional SC would continue as today, guaranteeing the other recycling targets for municipal waste and packaging.

SELECTIVE COLLECTION AND DEPOSIT RETURN SYSTEM FOR RECYCLING

The **DRS system for recycling** is in place in 13 European countries as of 2022, and its main purpose is to increase the interception of plastic beverage packaging with a capacity of up to 3 litres, in order to reach the new targets of 77% and 90% intercepted from the point of sale for 2025 and 2029 respectively, set out in the European Single-Use Plastic (SUP) Directive.

The DRS system for recycling is a deposit return system, necessarily on a national scale.

This return system can be carried out through manual collection by retailers or through automatic machines called RVMs (Reverse-Vending Machines) set up inside supermarkets/shops or in specific collection centres.

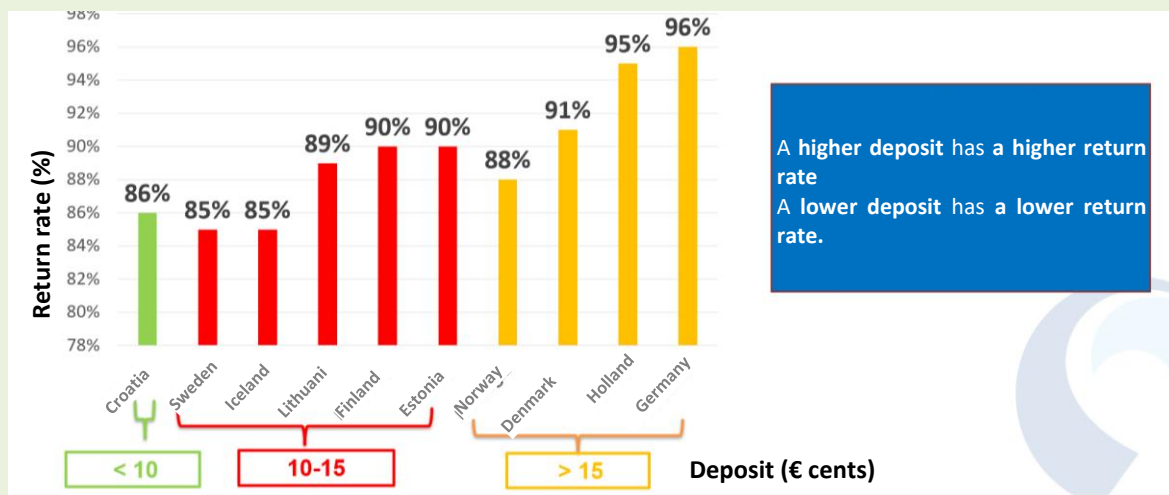
In Europe, recycling deposit systems in place as of 2022 are in 13 countries (in order of establishment, Sweden, Iceland, Finland, Norway, Denmark, Germany, Estonia, the Netherlands, Croatia, Lithuania, Slovakia, Latvia and Malta) and have been rolled out mainly in northern European countries.

Existing DRSs for recycling are mandatory systems established by law and are specific to beverage packaging for water, beer and soft drinks, mainly made of plastic, aluminium and, to a lesser extent, glass. In most cases they are non-profit in nature and are organised by beverage manufacturers in partnership with the large-scale retail trade.

It must be emphasised that, the deposit systems for recycling thus only cover a part of the packaging put on the market: from the data collected by CONAI through comparative studies at European level, the DRS system only covers a delta ranging

from 1% (the Netherlands) to 21% (Croatia) of the total packaging put on the market in the individual member states and only from 2% to 43% of packaging made from plastic, glass and metal alone.

The deposit, which is established and fixed according to the type of packaging, is closely related to the expected return rate and, in most cases, where it has a higher unit value, there are correspondingly higher packaging return rates.



DRS systems are a **parallel circuit that cannot be integrated with the current traditional separate collection system.**

Together with the establishment of a structure to manage the entire system on a national level, it is necessary to have a computerised system for the management of the deposit, the establishment of collection centres (municipal centres) or the purchase and maintenance of RVMs (Reverse Vending Machines), a logistics system parallel to that of traditional waste collection that takes care of emptying the centres or machines, and the introduction of a specific anti-counterfeiting labelling system that identifies the packaging that is subject to deposit.

This system is supported by costs that affect all stakeholders in the supply chain:

- Immobilised capital of deposits paid by consumers;
- Costs of running the entire system;

- EPR fees on packaging for end-of-life management, which are in any case paid by producers/users of beverage packaging.

Taking as an example the figures from Germany, which has had a DRS system for recycling since 2003, and applying the German deposits to the Italian quantities, we obtain a value of immobilised capital paid by the citizen of between €4 and 6 billion per year, which corresponds to almost 10 times the fee (CONAI environmental contribution) of the plastic stream alone.

This is counted alongside a share of deposits that is not returned by the consumer (a delta of between 4% and 12%) and which remains within the DRS system, estimated at between €200 and €500 million.

From a comparative analysis of the specific costs per inhabitant and tonne managed by the DRS systems currently operating in Estonia or Lithuania, which are among the few systems that are legally required to report expenses, for Italy this would be an increase of between €400 and €600 million on top of the deposits paid in advance by citizens when purchasing the product.

Lastly, it takes several years to implement a DRS system from scratch (estimated between 4 and 6 years), as it would be in the case of Italy, which has always chosen the separate collection route to collect quantities for recycling.

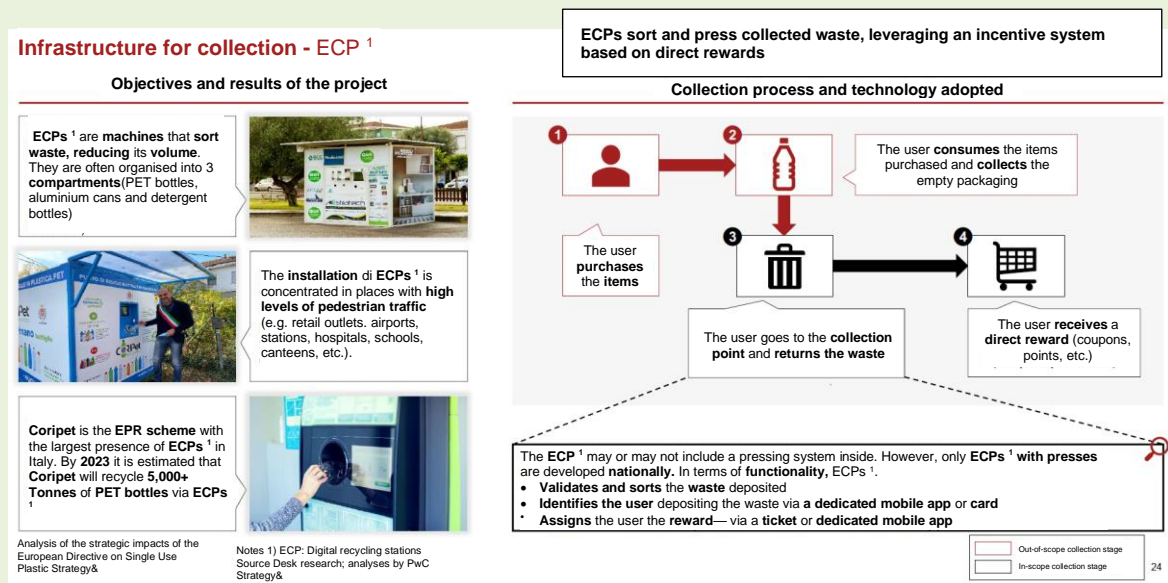
Selective collection to supplement the current system

In contrast to a deposit system for recycling, selective collection can be performed with various tools – digital recycling stations are one of the tools for selective collection with reward systems, also supported by the Decreto Mangiaplastica (“Plastic-eater Decree”) as one of the tools for the circular economy.

Rewarding takes place through a spending bonus/other incentive, when the empty packaging is returned and as an infrastructure it can be perfectly integrated with the traditional separate collection system.

It can also be implemented locally and/or in areas where there is a greater need for improved collection of a certain type of packaging/material.

Finally, they are an already concrete and available option. In contrast to the DRS solution, digital recycling stations for the collection of PET bottles are in fact already present in some regions of Italy and present themselves as a more cost-effective solution in terms of investment and time-scales.



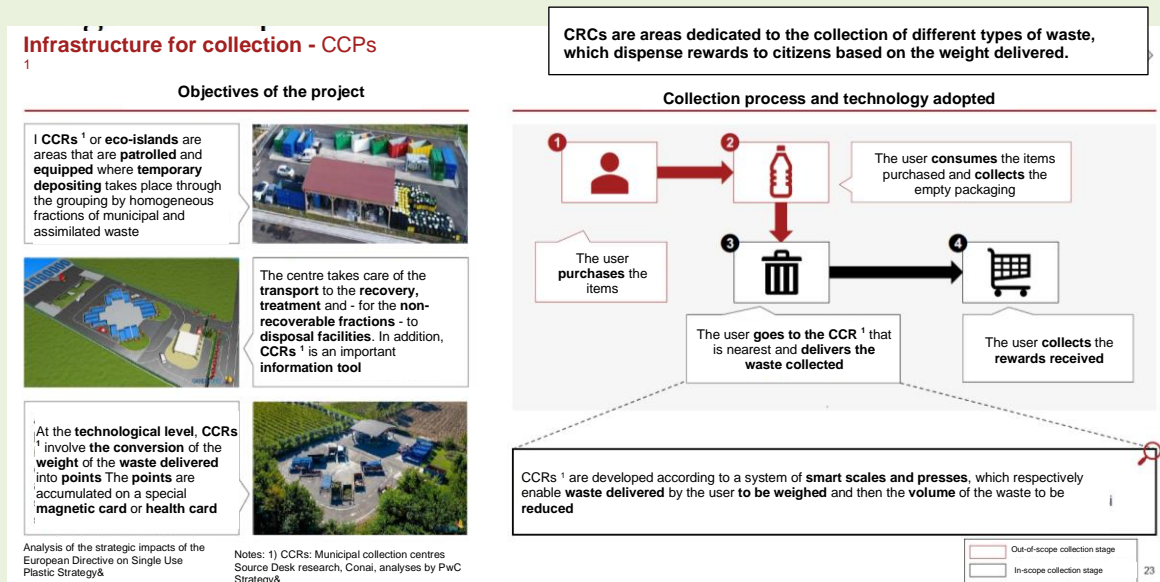
For example, for the installation and commissioning of an amount of digital recycling stations with a capacity of between 350 kg/month and 850 kg/month) which ranges from 9 to 22 thousand units, an initial investment cost is estimated to range from €280 to 450 million, to which about €40 million in annual operating costs should be added, assuming an intermediate gap (100 kt by 2029).

Similarly, a further model for the selective interception of PET bottles may be **Smart Municipal Collection Centres**.

Also in this case, these are project interventions that have already been recognised by the MITE as falling under the interventions eligible for PNRR funding.

In order to bridge the gap with these centres, assuming their location to cover the areas with the most PET bottles, and considering the model projects developed in

recent months to support local authorities in their participation in calls for PNRR funds, there would be investments of around **5 million euros**, to which about **9-10 million euros** in management costs would be added, again assuming a gap of 100 kt, i.e. much more than an extent that is lower in terms of cost than the deposit system.



EPR/RS THE CASE OF "RECICLOS" IN SPAIN

An interesting alternative initiative is the one adopted in Spain in 2019 known as **"Reciclos"**, a smart incentive system that also aims to increase the recycling rates of beverage bottles and cans.

The technology used with the reading and recognition of the packaging bar code, which is integrated in the recycling bins, is called 'smart ring' and is based on the **"Return and Reward"** concept, whereby the citizen can independently decide to deliver the packaging to these "smart bins" for recycling door-to-door or the street, and in return receives an incentive in the form of donations to charities/social causes or rewards to protect the environment and the community.

Using a smartphone camera, the citizen scans the bar code on the packaging of the product to be disposed of either at home or in the street and, once the smart bin is identified, scans the QR code on the bin and disposes of their packaging.

Infrastructure for collection - Reciclos

Objectives and results of the project

The **Reciclos** project was created within **The Circular Lab** ¹ through **pilot programmes** in a few cities ² in **Spain** with the aim of creating a **circular system** through an **RRS mechanism** ³



Reciclos has developed **2 different collection systems**:

1. **On-the-Go**: RS ⁴ through infrastructures similar to ECP ⁵
2. **Home**: SC ⁶ with integrated sorting mechanism

In **2020-2021**, Reciclos reported growing results:

- **+23.6%** collection of **PET bottles**
- **+8%** collection of **cans**
- **+13.5%** collection of **fine fractions**

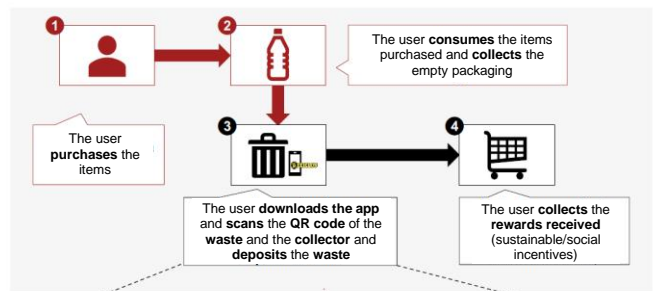


Analysis of the strategic impacts of the European Directive on Single Use Plastic Strategy&

Notes 1) The first innovative hub aimed at sustainable packaging and its subsequent recycling; 2) Igualada, Sant boi de Llobregat, Granollers, Pla de l'estany; 3) RRS Return and Reward System 4) Selective Collection 5) Digital recycling stations; 6) Separate collection; 7) Reciclos has developed a unique app for the home and on-the-go channel; Source Reciclos analyses Pwc Strategy&

Reciclos develops 2 collection systems with results that are on the increase, exploiting digital experience and innovative technologies

"Home" collection process and technology adopted



Reciclos has developed an **innovative collector** that adopts **"Smart Ring"** technology, with a **"smart" mouth** that:

- **Validates the waste** deposited (material and shape)
- **Identifies the user** depositing the waste via a **dedicated mobile app**
- **Records and links the information on place, time, type of waste and user of the deposit**

Out-of-scope collection stage
In-scope collection stage

As it stands, Spain had covered around 44 cities in the country's 17 regions and, by December 2021, already had an area of around 4.5 million inhabitants covered. The development plan includes improvements to technology and coverage of the entire country with smart bins. In relation to their results, they recorded an average increase in PET bottle collection of 23.6%, an 8% increase for cans and a 13.5% increase for other light packaging.

On the basis of the evaluations made so far and based on the results of the international analyses and the current national studies, CONAI intends to promote an effective and transparent discussion with the institutions and the various stakeholders, actively participating in the ongoing debate to define what the best option for the country might be, without prejudice to the targets to be achieved.

CONAI in fact believes that the preferable option is that of a **selective collection model to complement the current one**, in light of the fact that we are not starting from scratch but from a situation in which significant results have already been achieved in terms of PET bottle interception (the rate of interception for 2021 was around 69%) and of the fact that the national

packaging management model has so far proved to be among the most effective and efficient in Europe.

Intervening with an Integrative Selective Collection Model implies important coordination of EPR schemes and adequate planning to provide for different selective collection solutions depending on local and social contexts. In this way, it will also be possible to achieve the 2029 target and at the same time take action to achieve a reduction in littering, not only marine, but also on the roads.

Again, thanks to studies promoted in the past with the ERICA cooperative, it has been possible to identify the different contexts with a “tendency towards littering” that essentially concern consumption outside the home (large events, fairs, parks...). It is therefore by developing special projects, once again differentiated according to the context, that CONAI believes it is possible to make a further leap in quality.

Hence the attention that the Consortium pays and intends to pay more and more in the next few years to large events (e.g. EXPO), to awareness-raising campaigns on beaches (Ricicla Estate [Recycle in Summer]), to initiatives involving the “latest ones” as key players in a virtuous model of litter prevention (as in the case of the Rosarno project), as well as to work in port areas.

ROSARNO PROJECT

Facsimile for new projects to reduce littering and with social impact

CONAI already field-tested a project in 2019, carried out at the request of the MiTE, which involved the community of non-EU citizens from Rosarno and the San Ferdinando migrant camp in a disposal project with rewards for families.

The project involved a special regulation and the delivery of a card with an alphanumeric code to those who did not have one, to obtain a financial reward according to the quantities of packaging waste delivered to the specially equipped CCRs – Municipal Collection Centres, with the provision of meal vouchers for non-EU citizens from Rosarno and the San Ferdinando camp.



To sum up, then, as part of the activities planned for the coming years, CONAI intends to promote discussions with all stakeholders and at various levels to coordinate and guide activities in these areas, with the involvement of EPR schemes to calibrate interventions and harmonise methods of calculation of results, to guarantee transparency for institutions.

All this considering, on the one hand, the need to strengthen urban SC where it is still lacking and, on the other, to intervene with special projects in specific contexts and regions, in order to guarantee a greater yield also in the management of waste outside the home, thus also contributing to the development of overall recycling results as well as the SUP targets.

Lastly, the national strategy for awareness-raising measures to respond to the SUP is expected to be adopted by the MITE with the support of ISPRA, EPR schemes, regional and municipal authorities and consumer and environmental protection associations, for which an interesting development of CONAI's activities as coordinator of the different stakeholders is outlined, also thanks to the activation of specific in-depth studies within the existing Framework Programme Agreement Tables.

Note of methodology

Provisional data and corrections

Data contained in previous publications that are not in accordance with those in this volume shall be deemed corrected.

Rounding

As a result of rounding to thousands or millions operated directly during processing, the data in the tables may not tally with each other by a few units (thousands or millions) more or less. For the same reason, vertical or horizontal squaring within the same table has not always been possible.

Relative numbers

Relative numbers (percentages, percentage points, etc.) are generally calculated on non-rounded absolute figures, whereas many of the figures in this volume are rounded (to the nearest thousand, million, etc.). Redoing the calculations on the basis of these absolute figures therefore may give relative figures that differ slightly from those contained in the volume.

Abbreviations

inhab. = inhabitant(s);

Fee = CONAI environmental contribution

contr. = contracted party/ies;

kg = kilogrammes;

kt = thousands of tonnes; t = tonnes;

MATTM = Ministry for the Environment, Land and Sea

MITE = Ministry of Ecological Transition

K = thousands; K euro = thousands of euros; m = millions; bn = billions;

no. = number;

n.a. = not applicable;

n.d. = not available.

TUA (Testo Unico in materia Ambientale [Consolidated Environmental Act]) = Legislative Decree 152/2006 as amended

u.m. = unit of measurement