



**10 YEARS OF COMMITMENT AND RESULTS  
FOR THE ITALIAN CIRCULAR ECONOMY.**

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2011 - 2020 REPORT



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## **A LOOK ON THE 10 YEARS OF ECOPNEUS**

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The fact that End-of-Life Tyres were a resource with great circularity potential had been known for a long time before 7th September 2011. This is the day when Italy's first Ministerial Decree for the management of End-of-Life Tyres came into force. However, there is a "before" and an "after" this date. It separated a management model which had shown its limits with large amounts of ELTs abandoned on the territory in the course of the years, and the new model, based on the Extended Producer Responsibility. Ten years on, this model has set up a national tyre recovery system that is able to manage the over 350 thousand tonnes of ELTs that are generated every year.

In this system, Ecopneus is by far the main player. It is also an excellent example of consortium entrepreneurship for a number of reasons. First of all, due to the amount of ELTs it manages every year that require great organisational skills. Moreover, for its efficiency-based management approach, its transparency, its strict compliance with all rules and regulations, as well as for its boosting the rubber recycling market by promoting research and innovation.

The figures presented in this report are clear. Over 2.2 million tonnes of ELTs managed. Of these, about 52% have been recovered as material. This has allowed to avoid the release into the atmosphere of 5 million tonnes of CO<sub>2</sub> equivalent. Over 32 million Euros have been invested in research, development, and communication projects in support of the quality of the products of recycling, innovation, the environment, health, and for the contrast to illegality. Let us not forget also the resources invested and the effort Ecopneus has made for the emptying of the historical stocks and for the recovery of ELTs illegally dumped in the so-called "Terra dei Fuochi" in an important collection intervention coordinated with the Ministry of Ecological Transition, the Prefectures and the Councils of Naples and Caserta and the Ministry of Internal Affairs. The attention dedicated to dialoguing with the stakeholders is another decisive component for the success of the actions of Ecopneus. Towards the companies of the treatment chain for the consolidation of a specialised and reliable industrial system for the recovery of ELTs. Towards the Institutions, in support of important legislative innovations, such as the End-of-Waste Decree for vulcanised granular rubber. Towards the independent organisations that deal with environmental protection in various ways and with the promotion of the circular economy as a model of reference in the challenge of the ecological transition.

**Edo Ronchi,**  
*President of the Sustainable Development Foundation*



## **10 YEARS OF ECOPNEUS FOR OUR COUNTRY**

It is difficult to describe the journey Ecopneus has made during these 10 years separating the various levels and fields of work our efforts were concentrated on. The great focus on the operativity of collection, with an unparalleled comprehensive intervention all over the national territory, is strictly linked to a relationship with efficient and high-quality treatment plants. This has allowed to close the circle from waste to the market of recycled rubber, in a constant and monitored flow.

The legislative evolution has contributed to this positive momentum. Indeed, as of today, it has reached a set-up that has already incorporated the experience of 10 years of operativity of the national management system. Moreover, it has incorporated also the evolution of our company within the scope of a constant improvement logic that derives from our experience on the field.

The work carried out for the research and development of new markets has developed our skills. It has also pushed many companies from different sectors to participate in an innovation process we believe it to be a fundamental component for every sector, for the future of the next generations, and for our Country. This must respond to the stimuli and the objectives set out at national level, facing ever more urgent challenges for development and sustainability. Training and communication have always accompanied this journey. They have also contributed to raising the awareness, the culture, and the knowledge of our sector from the part of those technical, political and institutional figures we have always very closely collaborated with, putting the work of Ecopneus at the service of our Country. Above all, our effort has been the one of informing citizens - the real and ultimate recipients of our work - about a system that offers a concrete benefit to society thanks to the contribution of all the other stakeholders involved. Indeed, it protects the environment we live in and recovers recycled rubber in many applications that are useful for the daily life of communities. This has been our commitment during our first 10 years. It will carry on in the future. It is inspired by a strict compliance with ethics and a strong focus onto the mission the Legislator has entrusted us with. Our commitment is at the service of our partners, on whose behalf we comply with the responsibility of managing the end of life of a technologically advanced product, which is also strategic for our lives, such as tyres are. The data presented in this document are the concretisation of this commitment, the natural result of this transparent and, dare I say, also coherent approach.

These 10 years close also a personal cycle made of great effort, challenges and results achieved thanks to the teamwork that has always inspired Ecopneus, in our internal relationship as well as towards our external stakeholders. I wish a good job to Ecopneus for the next 10 years of new challenges and new objectives to reach.

**Giovanni Corbetta,**  
*General Manager of Ecopneus*

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Over 700 thousand collection missions carried out at about 25 thousand tyre dealers registered throughout the national territory. More than 2.2 million tonnes of End-of-Life Tyres managed, 130 thousand tonnes of which above its legal targets (+6% as an average every year). An extraordinary effort for the emptying of historical stocks of ELTs abandoned in the territories of the so-called “Terra dei Fuochi”, for a total of 87 thousand tonnes of collected ELTs.

These numbers summarise the operative results of Ecopneus in the first 10 years of its activity.

However, the contribution of Ecopneus to sustainability goes **beyond these exceptional management performances**. It also concerns the effort and the resources invested in research and development projects, in training and information for the valorisation of rubber and also in legality. All this has been carried out within the frame of a green strategy and the circular economy, allowing to build a system based on quality, competence, and innovation.

A strategy that has applied the indications of the European Action Plan for the circular economy ahead of its time. Moreover, it is a strategy that has developed and consolidated in **compliance with the prerogatives set forth in the law** and the European waste hierarchy. It has, thus, contributed to the emptying of historical stocks in a decisive way. These were stocks that had been lying for decades all over the Italian territory, from the North to the South of the Peninsula. The strategy implemented by Ecopneus has also prioritised the recovery of materials and has made use of energy recovery only for the amounts of ELTs exceeding the demand of the market of recycled rubber.

All this has been organised within the frame of **management efficiency**, transparency, and ethics. It is a guarantee for the market and, above all, for the citizens, who supply the financial resources necessary for the operativity of the system. Ecopneus has chosen to set up this system without owning productive assets. On the contrary, it has put together the best opportunities offered by the Italian business network into a **quality chain**, stimulating and incentivising the constant improvement of processes and the products of the treatment, in support of the **market of rubber recycling**.



# THE DIMENSIONS OF THE GREEN AND CIRCULAR ECONOMY STRATEGY OF ECOPNEUS

- Guarantee of the reaching of the yearly management target with a comprehensive collection all over the national territory.
  - Contributing to the emptying of historical stocks.
    - Prioritising recycling.
- Reporting the activities of operative and financial activities in a transparent way.
  - Minimising eco-fees.

• Activities of research and development on quality, safety and versatility of products and applications made with rubber from ELTs.

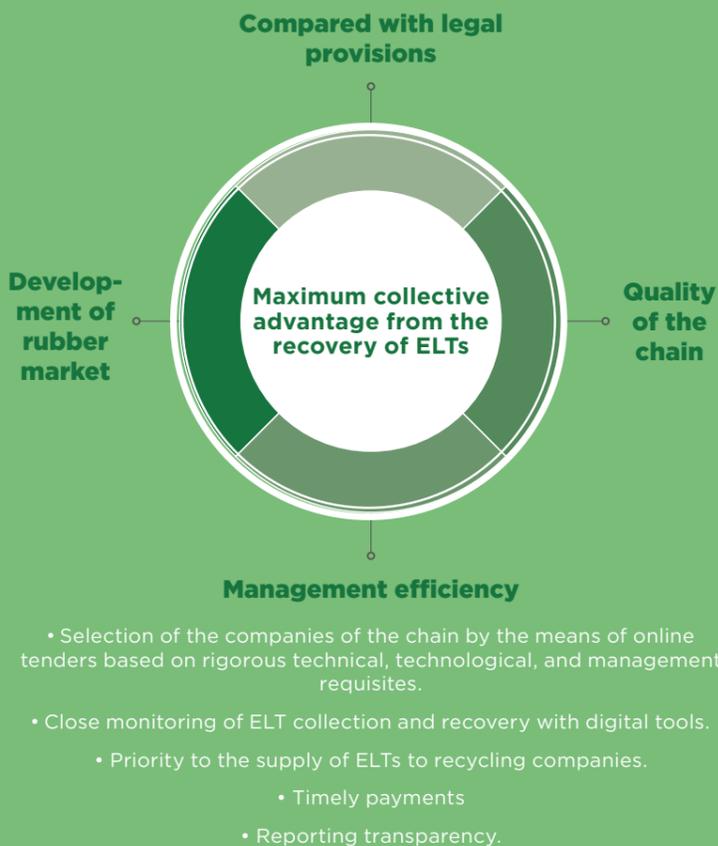
• Publication of technical manuals for applications and products.

• Promotion of products and applications in rubber thanks to demonstration exhibits and by the means of the online Catalogue of the Products made with rubber from ELTs.

• Participation in the ministerial work groups for the development of MECs within the scope of the GPP

• Information and communication initiatives aimed at the Public Opinion with reference to the correct management of ELTs and the value of the product in recycled rubber.

• Promotion of an end-of-waste legislation for the rubber derived from the treatment of ELTs.

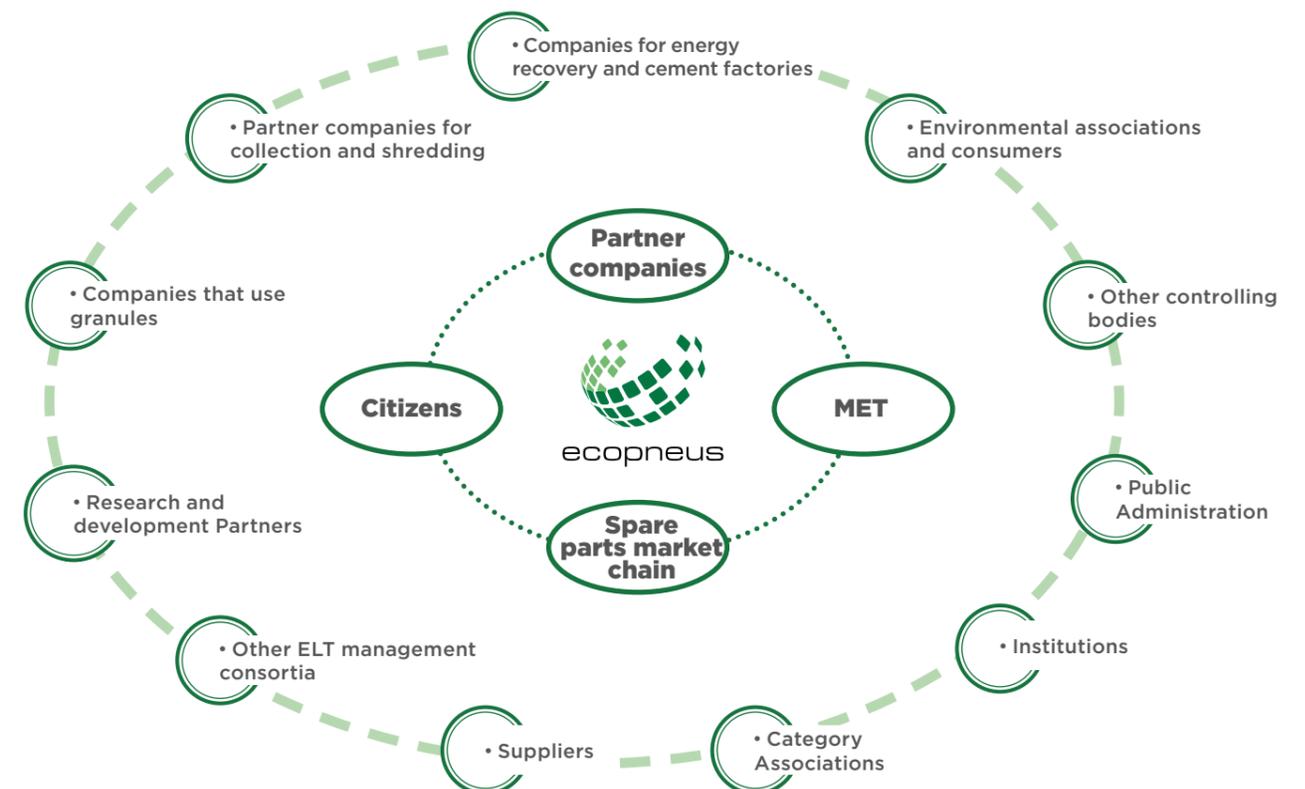


## GREEN AND CIRCULAR ECONOMY STRATEGY

The green and circular economy strategy Ecopneus has perfected and implemented in the course of time has involved all the stakeholders of the system in different ways: from citizens, to the Institutions, to the companies of the treatment chain and of the recycling sectors; from research bodies, to the associations. The aim is to maximise the benefits deriving from the recovery of ELTs for society.



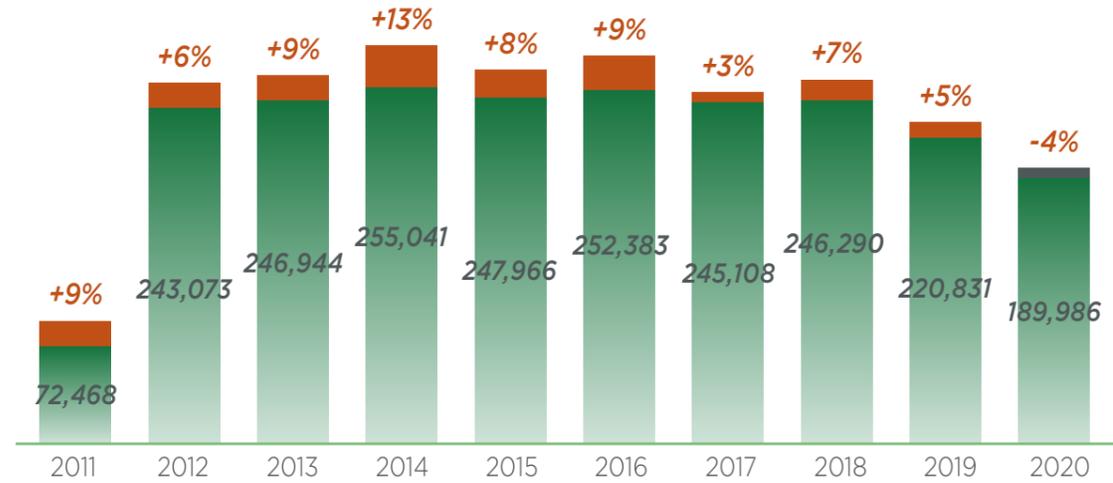
## THE ECOPNEUS STAKEHOLDERS' NETWORK



## THE COLLECTION FROM 2011 TO 2020

### 2011-2020 ECOPNEUS ELT COLLECTION

with details of the extra collection in percentage



■ Extra-target collected amounts (in tonnes) ■ Total collection (in tonnes)

of which  
over **130,000 TONNES**  
collected above legal target

**2,220,090 TONNES**  
of End-of-Life Tyres  
collected by Ecopneus  
from 2011 to 2020

of which  
**22,259 TONNES**  
managed in the  
Terra dei fuochi

of which  
**65,404 TONNES**  
from historical  
stocks

## THE MAIN OPERATIVE RESULTS

The equivalent of a pile of tyres of the dimensions of a football pitch and 1.5km high. This is the amount of ELTs that have been transformed from waste into resources by Ecopneus. 52% of them have been turned into recycled materials and 48% as fuel for the production of energy. This has allowed to save emissions for over 3.3 million tonnes of CO<sub>2</sub> equivalent. Moreover, 3.2 million tonnes of materials and almost 15 million cubic metres of water have also been saved.



## ENVIRONMENTAL RECOVERY PERFORMANCES

MATERIAL  
RECOVERY

**52%**

GREENHOUSE  
GAS EMISSIONS  
AVOIDED

**3.3 Mln t**

SAVING OF  
NATURAL  
RESOURCES

**3.2 Mln t**

SAVING OF  
WATER

**15.5 Mln m<sup>3</sup>**

ENERGY  
RECOVERY

**48%**



# QUALITY, RESEARCH, DEVELOPMENT, INFORMATION

In the described process, the many projects activated in the course of the years are particularly important. They are projects carried out in several sectors, such as the legislative one as well as the characterisation and development of the applications of recycled rubber. Moreover, relevant resources have been dedicated to the consolidation of the treatment chain. This has been done directly by the means of actions supporting the partner companies for the implementation of procedures and installation solutions to achieve the maximum quality and safety of the processes and products. It has also been done indirectly, stimulating the development of technical regulations of the sector and sharing the know-how during the workshops of the regulatory and standardisation Bodies in charge.

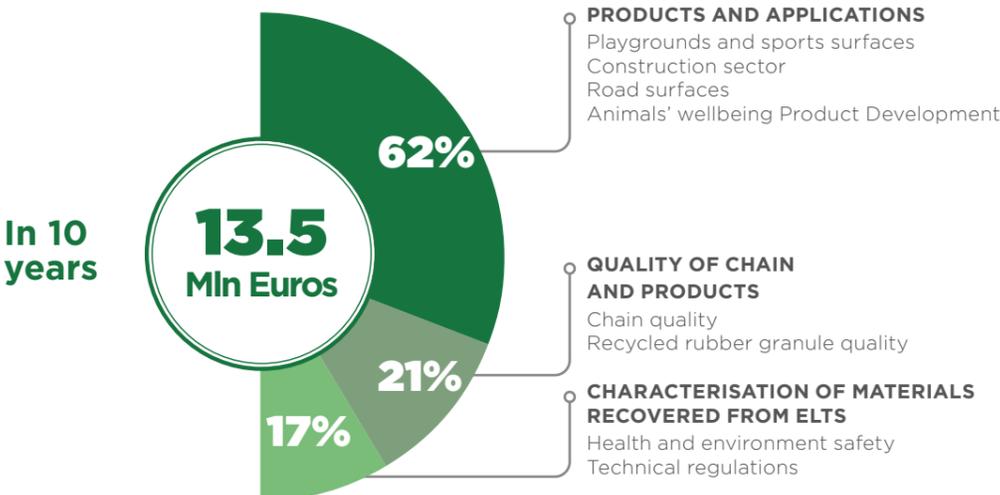
Thus, a great effort has been dedicated to research and development, with projects entrusted to main independent research bodies. These projects are aimed at verifying and certifying the technical properties and the environmental and safety aspects of granular vulcanised rubber in products and applications. These projects have often been accompanied by the co-financing of demonstration exhibits such as sports surfaces, synthetic turf football pitches, "rubberised" roads, or soundproofing of buildings. The exhibits have all remained at the disposal of the local communities of reference, thus adding social value to the investment.

These activities have been supported and accompanied by information and training projects aimed at citizens, students, partner companies, and the Public Administration. Their focus is on the benefits of an efficient and transparent management of ELT recovery and on the potentialities of applications and use of rubber recycled from End-of-Life Tyres.

These actions have been developed with the support of communication and awareness-raising campaigns, articles on specialised magazines, the organisation of technical workshops, the participation in conventions, seminars, and trade fairs. All this has been supported by the publication of technical and informative documentation that is now an articulated and in-depth collection at the disposal of a diversified group of interlocutors.

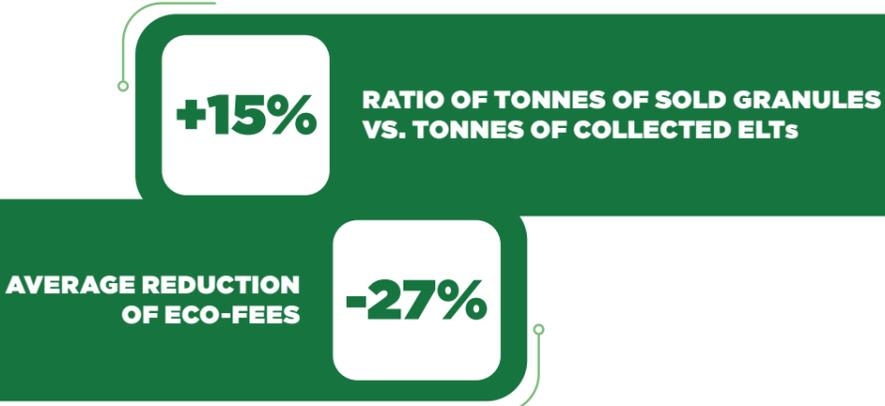
Projects, actions, and communication campaigns promoted by Ecopneus looking at the future of the system with a double perspective. On the one hand, they aim at turning the management of ELTs in Italy into an industrial system of quality that keeps up with the existing best practices and treatment technologies. On the other hand, the objective is to create the conditions of knowledge and trust that are necessary to open new markets for recycled rubber as a valid and performing alternative to many virgin raw materials in products and applications.

## INVESTMENTS AND PROJECTS OF ECOPNEUS FOR THE CONSOLIDATION OF THE SECTOR OF ELTS AND THE PROMOTION OF RECYCLED RUBBER



This commitment has contributed to the consolidation of the national system of ELT management and to the development of a recovery market. It will be able to contribute to partially weaning the system off eco-fees in the future, thanks to a demand and, thus, to a value of recycled rubber on the market. In its turn, it will be able to support and finance the system of ELT management it derives from.

## GROWTH OF THE RECYCLING MARKET AND REDUCTION OF ECO-FEES IN 10 YEARS OF ACTIVITY (2011-2020)



# FOCUS: SUMMARY OF THE RESULTS OF THE OPERATIVE MANAGEMENT OF ECOPNEUS IN 2020

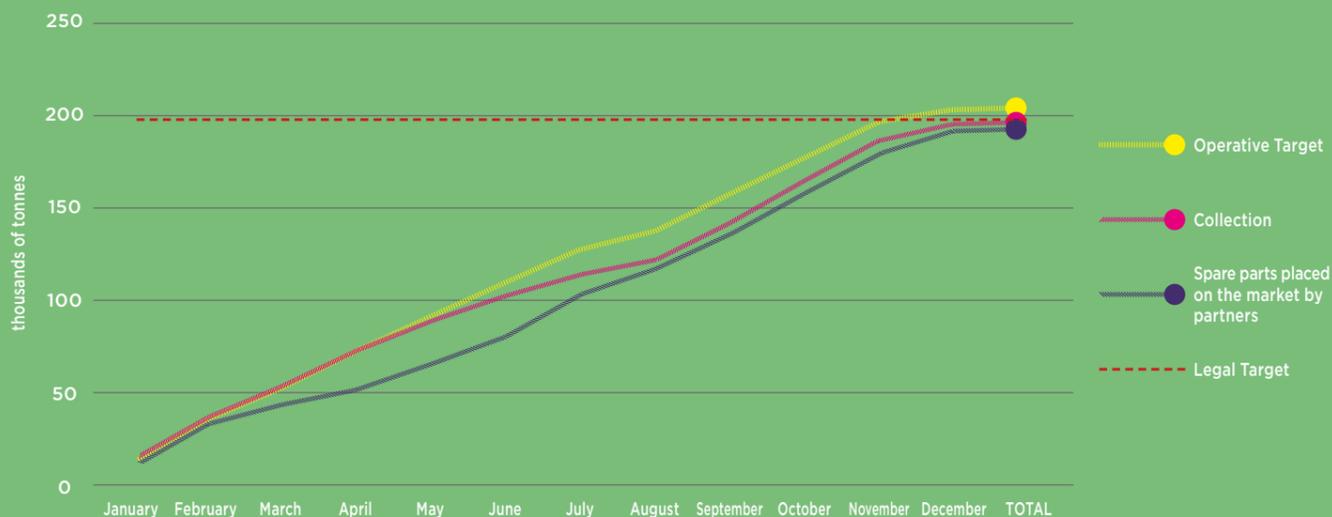
As of 31<sup>st</sup> December 2020, the ordinary collection carried out by the Ecopneus system amounted to 189,569 tonnes of ELTs. Other 417 tonnes of extra-ordinary collections carried out within the scope of the Memorandum of Understanding for the Terra dei Fuochi are to be added to this figure, for a total of 189,986 tonnes collected.

Compared with the legal target provided for on an annual basis and set at 196,501 t (calculated on the amounts of the spare parts placed on the market by the partners of Ecopneus during the previous solar year, minus the 5% of the wearing of the tread and the tyres exported), 6,932 t of ELTs are missing. This amount, however, was collected during the first 15 days of 2021 and it will contribute to the reaching of the 2020-2021 target, as per the derogation exceptionally introduced in the Decree Law nr. 40 of 5th June 2020. Indeed, the derogation states that (art. 4-ter): "In the light of the emergency situation deriving from the COVID-19 pandemic and the measures introduced to control it, from the moment that they affect the commercial activities and the movement of people, the objectives of the management of the amounts of End-of-Life Tyres on an annual basis [...] for the current year are set for the 2020-2021 two-year period. As a consequence, the check of the amounts of End-of-Life Tyres managed by the responsible parties is carried out calculating the tyres placed on the market and destined to be sold during the 2020-2021 two-year period".

For Ecopneus, the criticalities described in the decree are summarised in a 22% reduction of the profits from the eco-fees on an annual basis. In its turn, this is due to a reduction of the same amount of tyre sales of the partner companies. Ecopneus has faced this hard moment with responsibility. Indeed, it has partially compensated the difficulties faced by the whole sector drawing from its financial reserves to help with ELT collections. The latter are, in any case, higher than the amounts placed on the spare parts market by the partners during the whole lockdown period and its following months.

The collection and management objectives were aligned to the sales of the partner companies in the second part of the year. This has prevented the need of raising the eco-fees for the years to come as the financial structure of the consortium system must always be kept balanced.

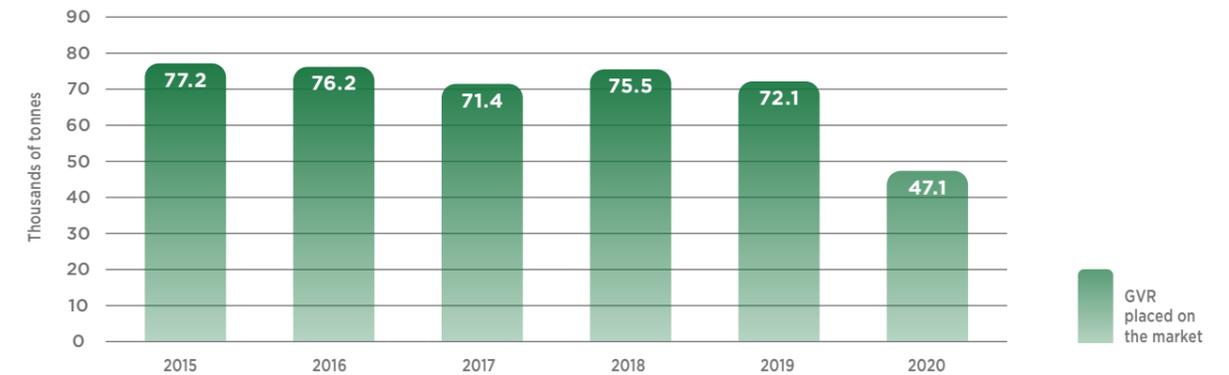
## Overall performance of the collection of Ecopneus in 2020



For what concerns the annual balance of the effective material recovery, the 2020 performances of Ecopneus show a recovery of material equal to 47%. This is ten percentage points less than 2019. The balance is calculated bearing in mind both the quantitative of materials that have been treated and recycled, and the amounts of inorganic residues (steel and other metal oxides) recovered as cement components for those ELTs used as fuel in co-processing activities in cement factories.

Even in this case, the reduction can be ascribed to the financial repercussions linked to the pandemic and the subsequent slowing down of the productive activities in all sectors. In 2020, the demand of end-of-waste GVR (granular vulcanised rubber) produced by the companies of the Ecopneus chain for its recycling into products and applications was equal to a little more than 47 thousand tonnes. This contrasts with the over 70 thousand tonnes recorded as an average in the previous years.

## Recycled rubber placed on the market by the companies of the Ecopneus chain (2015-2020)



## THE EVOLUTION OF A SYSTEM

Following the implementation of the 1999/31/EC Directive, the disposal of ELTs in landfills has been illegal since 2003. As such, tyre dealers, mechanics, and other operators that needed to dispose of the End-of-Life Tyres generated from their activities found themselves dealing with waste management companies and intermediaries that offered to meet such needs in exchange of some fees.

In many cases, they were companies that possessed all regular authorisations and installations suitable for guaranteeing that the ELTs would be handled in compliance with all legal provisions. The MD of 5th February 1998 was of particular importance as it already provided for the opportunity of rubber recycling into several products and applications.

However, only a minimum amount of the ELTs managed in the market was treated for recycling. The majority was transformed into fuel that was exported to remote foreign destinations if they were not used in authorised plants in Italy. In other cases, the ELTs ended up abandoned in illegal piles. We are aware of their existence thanks to the work carried out by the law-enforcement bodies who have confiscated hundreds of illegal landfills in the course of the years. This has been reported in the series of publications called Copertone Selvaggio (Wild Tyre), published by Ecopneus in collaboration with Legambiente.

To put an end to a situation that was getting more and more critical, **article 228 of DL 152/2006** first intervened to attribute the post-use responsibility of their own products to the producers and importers of tyres in Italy. After this article, the **M.D. 82/2011**, "Regulation of the management of End-of-Life Tyres", of the Ministry of the Environment (today it is known as the Ministry of Ecological Transition) defined the implementation modalities of producers' and importers' responsibility. It also provided for the setting up of a national system for the management of ELTs, with the aim of ELT tracing, collecting and recovery in Italy.

In 2020, the M.D. 182/2019, updated and perfected some areas of the previous decree. In any case, it confirmed how, ten years after the first regulation, the model of the **extended producer responsibility** adopted in Italy for the management of this flow of waste was a winning choice of the Italian legislators.



# Focus on Legislation: The news introduced by the M.D. 182/2019

Following its publication on the Official Gazette, the new Regulation of the Ministry of Ecological Transition - the MD 182/19 - came into force on 23rd April 2020. This Decree updates the discipline of timing and modalities management of end-of-life tyres introduced with the previous M.D. 82/11. The new regulation intervenes on several aspects of the management of ELTs in Italy to tackle new problems and criticalities that have emerged in the course of the years and that were not provided for in the first Decree dedicated to this sector.

## Extension of management obligations to all parties

One of the scopes of action of the new MD concerns the producers and importers who have their registered headquarters abroad. They place new tyres on the Italian market also through e-commerce platforms for the direct sale to end-users. The MD 82/11 did not provide for any obligations for these cases. This situation effectively allowed them to avoid paying the eco-fees, thus making other systems bear the costs of ELT management. The new decree forces foreign companies to nominate a legal representative in Italy who will be entrusted with a mandate for the compliance with all legal obligations related to ELT management. In particular, they will have to either set up their own management system or join an existing organisation. In this case, they will be able to transfer all legal obligations to this organisation and pay the due eco-fees.

Moreover, the new decree defines the figure of the “neo-operating” importer or producer. This is a company that starts its business activities during the solar year when the eco-fees are applied for the first time. For these cases – and only for their first year of business activities – the Decree has provided for the obligation of ELT management based on the tyre amounts placed on the market during the same year and not based on of what was sold during the previous year - as it is for all consolidated businesses. This provision was implemented to avoid that a company specialised in tyre import and sales may be set up and then shut down during the same solar year (and then created again with a different name during the following year, etc), thus eluding the management obligations of the related ELTs at the expense of other collection systems.

## Target-based management

New and more stringent rules have been introduced with the MD 182 for what concerns the target-based ELT management obligations. This is set at 95% of the weight of all new tyres placed on the market during the previous solar year (or the current one for the neo-operating companies) net of exports. Further limitations have been introduced to assure that the obliged parties carry out a full and complete collection service for the whole national territory. In this sense, the new MD specifies that the management target is composed of amounts of ELTs of all brands divided by dimensional categories (small, medium, and large tyres) in proportion to the amounts placed on the market. Moreover, the management target is now set on regional territorial basis. Finally, the collection of ELTs must be carried out constantly during the whole solar year, respecting the order of the calls of the spare parts operators that are registered for the service and that ask for collection.

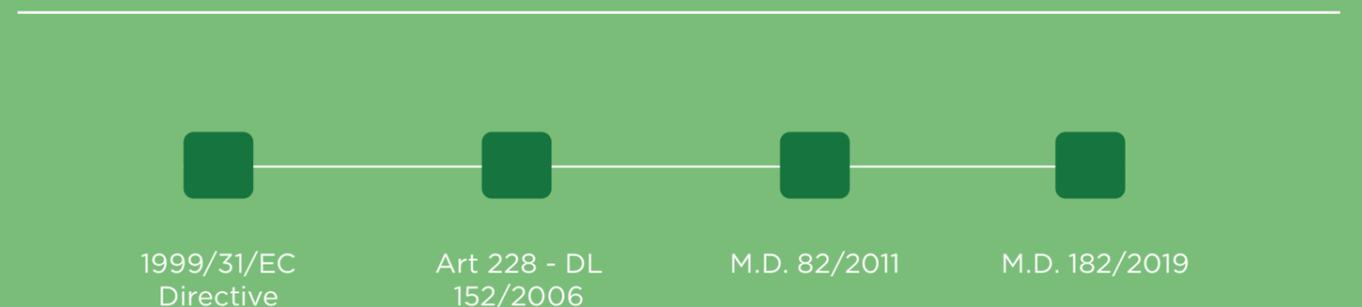
## Efficiency and transparency

Compared with the previous regulation, the MD 182 introduces also further elements with regards to management efficiency and transparency obligations applicable to the responsible parties. For what concerns efficiency, the modalities for the determination of the eco-fees applied every year to cover management costs have been detailed. Moreover, notwithstanding the non-profit nature of all collective or individual forms of management, the Decree has introduced the obligation of the use of any eventual operating surpluses for the reduction of the eco-fees within the two following business years. These operating surpluses may also be used for other activities of ELT management that are subject to specific framework agreements or memoranda of understanding with the relevant authorities. Another obligation that has been introduced is the one of being able to demonstrate the capacity of the system to operate according to the principles of efficiency, efficacy, and cost-effectiveness for the reaching of the set targets. This obligation is to be carried out by the means of specific documentation to be presented to the Ministry of Ecological Transition.

With reference to transparency, the annual reporting obligations to the Ministry of Ecological Transition have been reinforced, both for what concerns the financial management, and the recovery activities – there included the traceability of the flows with the aid of IT systems. Finally, the producers and importers of ELTs are to join the National Register of the Producers and Importers subject to ELT management obligations.

For what concerns the transparency towards consumers or citizens more in general, the associated management bodies are to equip themselves with a website where the main data and information subject of reporting to the MET are to be published together with their articles of association and their organisational chart. Examples of data to be reported to the MET and that are to be found on the websites of ELT management bodies are: the annual report on the reaching of the planned objectives, the amount of eco-fees, information about their activities of research and development as well as their results.

## LEGISLATIVE TIMELINE OF THE NATIONAL ELT MANAGEMENT SYSTEM



# THE GOVERNANCE MODEL OF A SYSTEM OF COMPANIES

Ecopneus was formally set up by the world's largest tyre producers (the "founding partners") in 2011: Bridgestone, Continental, Goodyear, Marangoni, Michelin, Pirelli. As per its Articles of Association approved in accordance with the rules and regulations of the Ministry of Ecological Transition, the legal status chosen for Ecopneus was the one of a non-profit joint-stock consortium. Its ordinary shares are held by the founding partners, that nominate/are part of the Board of Directors. Other partners, known as "adherent partners" are admitted for the fruition of the management services offered by the consortium. The President of the BoD is appointed on a rotating annual basis among the top managers of the founding partners. The President is the top manager and is assisted by the General Manager who is entrusted with the management of the consortium in order to avoid conflicts of interest among the companies who are partners in Ecopneus but competitors on the market.

## BOARD OF DIRECTORS:

It is nominated by the 6 founding companies. The President of the BoD is appointed on an annual basis and provides for the rotation among the Administrators.

## BOARD OF AUDITORS:

It is composed of 3 members nominated by the Shareholders' Meeting. It is in charge of the control and verification of the compliance with all legal provisions, the Articles of Association and the correctness of the business processes.

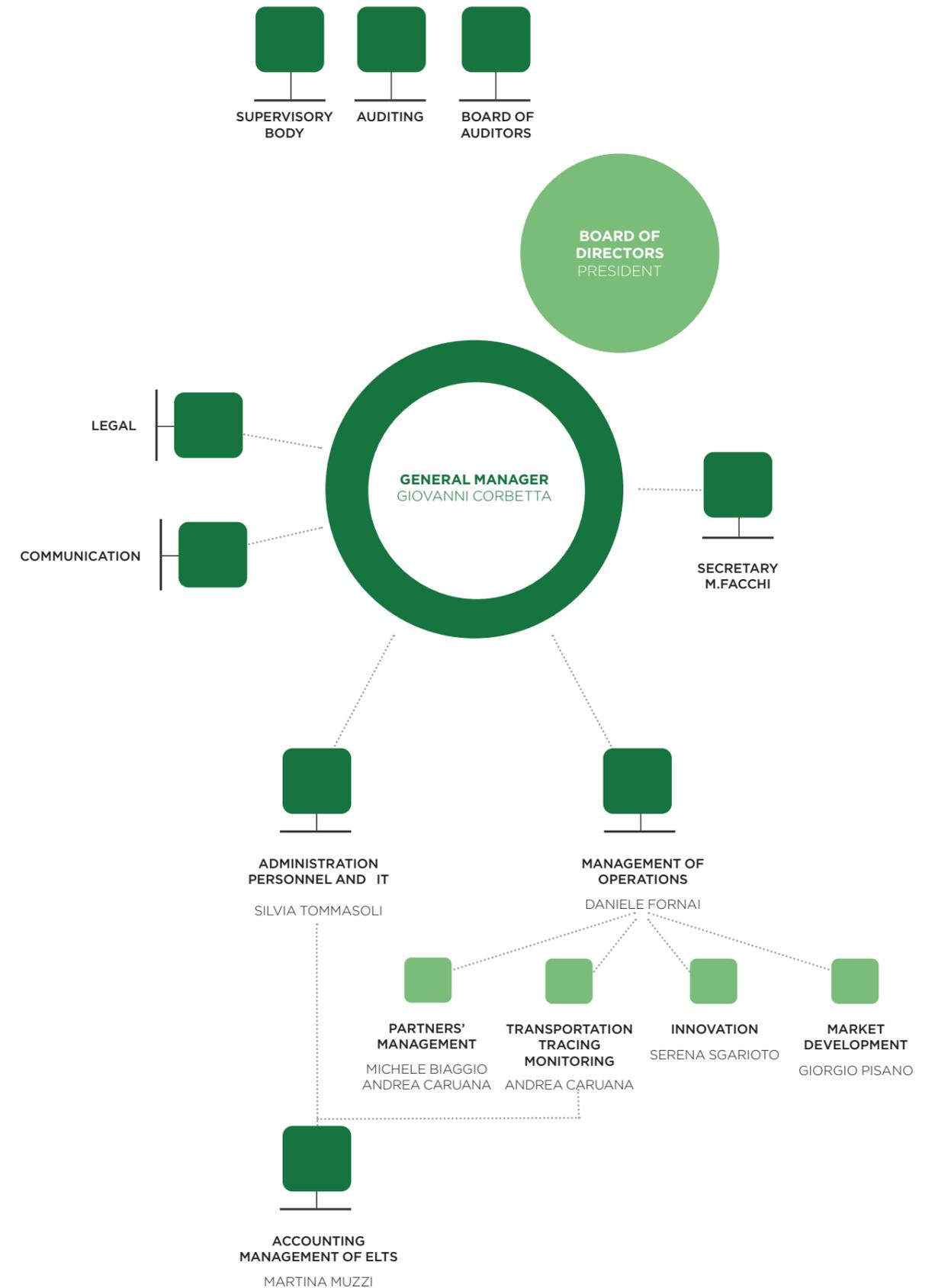
## EXTERNAL AUDITING COMPANY:

It verifies the correctness of financial statements and all fiscal obligations.

## SUPERVISORY BODY:

It is entrusted with the promotion and the effective and correct implementation of the 231 Model, also by the means of the monitoring of business behaviour and activities.

# THE ECOPNEUS GOVERNANCE



For the organisation, the management and the control of activities, Ecopneus has chosen the Model 231/2001 as its model of reference. This is the set of principles, procedures, and provisions issued by the Legislative Decree nr. 231 of 8th June 2001 on the penal responsibility of legal persons. To further assure the legality in the relationship with its stakeholders, Ecopneus has adopted a Code of Ethics to guide the actions and the behaviour of all those who are involved in the management of its activities. The control bodies include the Board of Auditors and the Supervisory Board. The Board of Auditors is in charge of verifying the compliance with all legal obligations, the rules set out in the Articles of Association and the truthfulness and correctness of the financial statements. The Supervisory Board, instead, is in charge of supervising the civil and penal responsibility of the administration.

Within the scope of this solid governance framework, the operative solution chosen by Ecopneus for the organisation of its activities of collection, transportation, and recovery of ELTs is the one of availing itself of a network of specialised companies selected on the market.

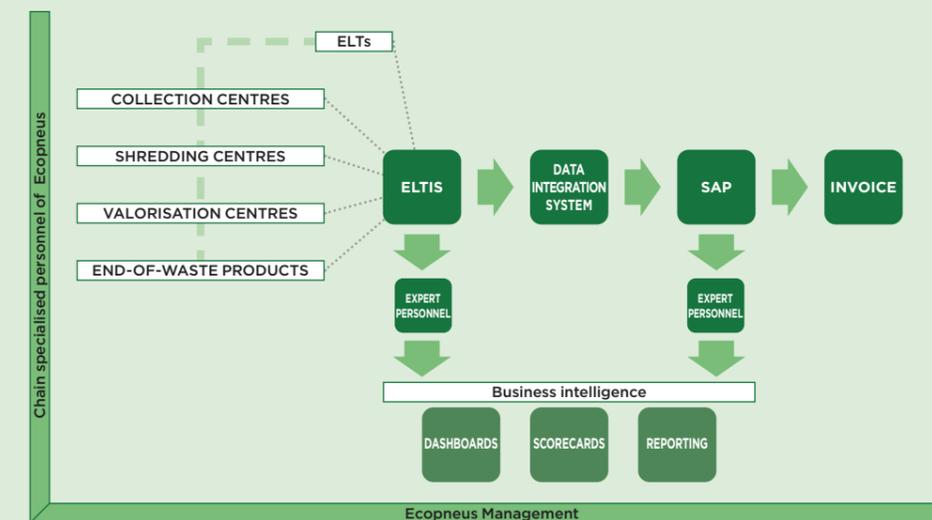
The guidelines and the control of management in its strategic aspects are under the supervision of a restricted but highly qualified management structure. This is supported by a solid business intelligence system for the planning, monitoring, and traceability of the ELT flows managed. Ecopneus sees a further guarantee of efficiency and transparency towards its stakeholders in its choice of not possessing any productive asset and minimising its management structure. Indeed, the latter is supported by expert consultants in case of need. In other words, Ecopneus believes that not having to take into consideration any interest on the remuneration of the capital invested in the management of ELTs is of great value.



## BOX: the system of business intelligence of Ecopneus

As an average, Ecopneus manages the equivalent in weight of about 20 million tyres of various dimensions every year. The tyres are collected, transported, treated and recovered. To be able to do all this respecting the criteria of environmental advantage, cost-effectiveness, transparency, and traceability of the flows provided for by the legislation in force, it is necessary to possess great organisational and control skills. These are obtained by the means of the availability of data and information.

In Ecopneus, this is achieved with the support of a Business Intelligence System that integrates the potentialities of proprietary software (ELTIS, End-of-Life Tyre Information System) with a SAP module for the administrative and accounting management. ELTIS is a software that records the data related to all handling and treatments of ELTs carried out by the companies of the chain.



Thanks to this Business Intelligence System, the Ecopneus management structure can instantly access the information about the amounts of whole ELTs collected on the territory, temporarily stored at collection centres, or waiting to be treated in treatment plants. They can also be instantly informed about the companies' production plans, the warehouse stocks of the treated products and of the amounts effectively recovered as fuel or recycled as materials. All this is a wealth of information that allows to optimise the planning of the tyre flows to be recovered prioritising material recycling. Starting from this information, the management of ELT flows consists of an articulated process for the planning of the activities with reference to the objectives set by the legislation and related to the green strategy of Ecopneus. These activities follow a Plan-Do-Check-Act approach in a process aimed at the constant improvement of performances.

In Ecopneus, the governance of management processes makes reference to specific procedures set out in a **Quality and Environment Integrated Management System (QEIMS)**. This system is certified with reference to the UNI EN ISO 9001 and UNI EN ISO 14001 standards. The QEIMS has been designed bearing in mind the legislative framework and the market of reference for the recovery of ELTs and it has been inspired by the principles of total quality. The QEIMS of Ecopneus guarantees the operational continuity constantly and closely interacting with the operators of the chain.

# THE OBJECTIVE OF QUALITY IN THE CHAIN

One of the main principles of total quality in business management makes reference to the reliability of the reciprocal benefit among suppliers. In an integrated chain, where every company supplies an input to another one up to the sale to the end consumer, this reciprocal benefit can be seen in the adoption of shared management standards that aim at the objective of the end quality. In the course of the years, the Ecopneus chain has consolidated a network of partner companies that have fully accepted the proposal of the consortium to set up a growth process that provided for the progressive introduction of high quality standards in processes and products as a critical success factor for the efficiency of the system, favouring an overall improvement of the national system.

## THE DIFFUSION OF THE MAIN CERTIFICATIONS AMONG THE COMPANIES OF THE ECOPNEUS CHAIN



This process started in 2011, when Ecopneus requested the companies of its chain to periodically take part in programmes of verification of their compliance with the provisions set out by the standards of reference. This process has gradually turned into a compliance system aimed at all companies – each one of them for their specific role in the recovery value chain with regard to the adoption of specific procedures for the management of the activities in a perspective of constant improvement.

Starting from the logistics of collection, which is that set of activities that concern the collection of ELTs from their generation points, the temporary storage of ELTs and their handling before recovery, Ecopneus has developed and shared some guidelines for the management of criticalities with the companies dedicated to these activities. Indeed, these criticalities may compromise the subsequent recovery phases. Examples are the attention paid to the selection of tyre dimensions and the state of preservation of the ELTs collected from the generation points, paying particular attention to the presence of contaminating substances.

Ecopneus has dedicated greater resources and attention to the growth and the consolidation of the companies that treat ELTs for their recovery, both with reference to investment for projects, and with dedicated members of staff. This project started with the elaboration of the **Quality Manual for ELT Recovery Plants**. This is a tool put at the disposal of companies to integrate the already existing procedures with the aim of reaching the uniformity in the quality of the products derived from the treatment of ELTs – whether they are destined to the recycling market or they are energetically recovered as fuel.

The Manual has been based on the main international standards on Quality Management System (UNI EN ISO 9000 and 9001, UNI ISO 10005) and it has been integrated with references to rules and requisites that are specific for the products derived from ELTs. Its development has seen the members of staff of Ecopneus constantly interacting and exchanging information with the players of the chain. As such, it represents a unique case for its inherence to the production processes of the companies of the sector.

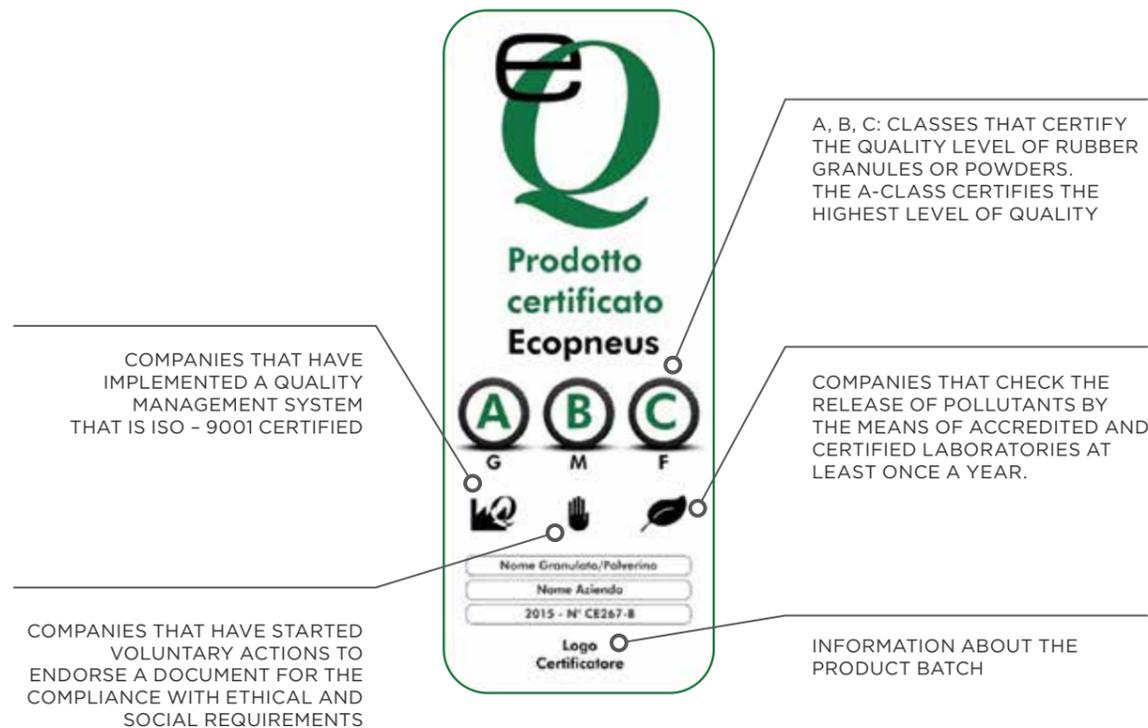
Moreover, to complete this process, Ecopneus has developed the **Ecopneus Quality Logo** (Qe Logo), which is now at the disposal of the companies of the chain. This is a product quality certification that certifies the higher quality of rubber granules and powders that are classified as “non-waste”. These granules and powders are obtained from ELT recovery activities carried out by plants authorised as per Art. 210 and 212 of the Decree Law 152/2006 or that possess the Environmental Integrated Authorisation issued by the relevant Authorities.

## BOX: selection and evaluation of the performances of the Ecopneus chain companies

The service contracts of the companies of the Ecopneus chain are periodically renewed by the means of e-tenders, that are always open also to new companies. The best offers are evaluated and a strict verification of specific eligibility requirements is carried out. In particular, on top of the authorisations to operate, the following are evaluated: the experience in the sector, the coherence between the activities that are the subject of the tender, as well as the installations and the tools possessed by a company. Moreover, also a company’s financial strengths and their presence in the White List of the Prefecture of competence are taken into consideration. White Lists are special lists that certify that service providers and executors of work activities are not subject to attempts of mafia infiltrations as per art. 1, par from 52 to 57, of the Law n. 190/2012.

In addition to this, Ecopneus asks the companies of the chain to periodically participate in programmes of conformity of the company’s processes and procedures following a check list of objective requisites. These requisites are based on the main international Standards about environment, health and safety on the workplace, and social responsibility (OHSAS 18001, ISO 9001, ISO 14001, EMAS, SA8000). This procedure is carried out from the beginning of the companies’ working activities as a guarantee of all contractual agreements. The programmes of auditing are executed by the main certification companies and business consultants. In the course of the years, the audits have evolved into including also aspects of a company’s management that are not directly linked to objective criteria of procedural nature (by way of example, with reference to the marketing strategies for the promotion of products, the company’s skills at transforming their clients’ requests into customised offers, the orientation to results, the management’s willingness to change, etc). All this aims at identifying eventual weaknesses and implementing appropriate improvement actions in order to allow the companies to improve in every aspect of their activities.

## THE QUALITY CERTIFICATION OF THE PRODUCTS OF THE TREATMENT IN THE ECOPNEUS CHAIN



With reference to the technical specifications written by Ecopneus in collaboration with Certiquality, the Qe brand placed on granular vulcanised rubber derived from the treatment of ELTs guarantees the conformity of the materials with the minimum certified requisites with regards to the traceability and the chemical-physical properties of the product. In particular, the technical specifications certify the provenance of the treated tyres from the Ecopneus network, the traceability of the production batches, the identification of the products in compliance with the declared specifications, and the certification that it is a “Remade in Italy” recycled product.

The implementation of advanced quality management systems is a strategic choice. In the face of a return on investment in the medium term, these systems can cost the companies large amounts of money for their initial investments: for example, for the adaptation of the existing processes to the new management procedures and for the training of their members of staff.

In this sense, on top of the guarantee of the **compliance with the contractual agreements** for the supply of ELTs to the plants and the **timely payments** for the supplied treatment services, the role of Ecopneus has developed even by the means of its openness to dialogue and the **sharing of specialised skills**, also availing itself of qualified external consultancies.

### BOX: the chain conventions

The conventions of the Ecopneus chain are a moment of confrontation and sharing of strategies and development objectives. Periodically organised with the aim of activating synergies among the various stakeholders of the value chain of End-of-Life Tyres, these conventions provide for the participation of the companies of ELT collection and treatment, as well as those that represent the market of rubber recycling and experts representing the various areas of interest of the sector.

#### The planning

of the works of the conventions follows an effective scheme. First of all, the management of Ecopneus present their introductory reports on strategic guidelines, the results obtained, and the main criticalities faced. After that, the conventions see the alternation of advanced training moments on specific relevant topics (by way of example, the legislative evolution, the opportunities linked to new technological developments, market scenarios etc) with moments of in-depth analysis on specific issues organised as round tables. Finally, there are also shared moments of confrontation and summarising.

For Ecopneus, the elaboration of the participants’ contributions represents a further important tool for the evaluation and the critical analysis of the work done. It is also an incentive to plan new actions, programmes, and projects for the future.

To complete the project of repositioning of the chain of ELT recovery within the frame of system quality, Ecopneus has stimulated and supported the writing of **product and treatment technical specifications for the sector**. They make reference to all those aspects that are necessary to reassure both markets and users about the quality and the safety of the materials derived from ELTs.

Indeed, one thing is to tell the market that a product is of quality and does not harm the environment and human health; another thing is to say that a product is so quoting Standards and technical specifications that have been certified by a known certifying body as the best way to carry out a process, make a product, verify its composition etc.

In this respect, Ecopneus has acted in two ways. It has encouraged the participation of their experts to work groups organised by UNI - at national level- and CEN at European level. With reference to the CEN work groups, Ecopneus chairs the Technical Committee “CEN TC 366 - Materials obtained from ELTs” for the definition of technical specifications and regulations related to the products of the treatment of ELTs. On the other hand, Ecopneus has financed important research activities to prove the effective validity of the proposals made during the work groups.

## STANDARDS OF REFERENCE FOR THE SECTOR OF END-OF-LIFE TYRES

<b>UNI 11610-1:2015</b> End-of-Life Tyres (ELTs) - Materials in vulcanised rubber obtained from the recovery of ELTs - Part 1: Classification and specification of granules.	<b>UNI 11610-2:2015</b> End-of-Life Tyres (ELTs) - Materials in vulcanised rubber obtained from the recovery of ELTs - Part 2: Classification and specification of powders.	<b>UNI 11610-3:2015</b> End-of-Life Tyres (ELTs) - Materials in vulcanised rubber obtained from the recovery of ELTs - Part 3: product labelling - granules and powders.
<b>UNI CEN/TS 16916:2016</b> Materials obtained from End-of-Life Tyres - Determination of the specific requisites for the sampling needed to check the humidity content using the method of kiln drying.	<b>UNI CEN/TS 17189:2018</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Determination of the real intensity of granules - Method based on the use of a water pycnometer.	<b>UNI CEN/TS 17188:2018</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Sampling methods for granules and powders in big-bags.
<b>UNI EN 14243-2:2019</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Part 2: Granules and powders - Methods for the determination and the distribution of the dimensions of impurity particles, there included free iron and free textiles.	<b>UNI EN 14243-1:2019</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Part 1: General definitions related to the methods for determining dimensions and impurities.	<b>UNI EN 14243-3:2019</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Part 3: Shreds, primary cuts and chips- Methods for determining its/their dimension(s), there included the ones of the protruding filaments.
<b>UNI CEN/TS 17307:2019</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Granules and powders - Identification of elastomers: gas-cromatography and mass spectrometry of products of pyrolysis in solution.	<b>UNI CEN/TS 17308:2019</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Steel threads - Determination of the non-metal contents.	<b>UNI/TR 11791:2020</b> Materials from the recovery of End-of-Life Tyres (ELTs) - ELT cleaning systems.
<b>UNI 11793:2020</b> Materials from the recovery of End-of-Life Tyres (ELTs) - Granular Vulcanised Rubber (GVR) - Leaching tests for the determination of the environmental compatibility.	<b>UNI CEN/TS 17045:2021</b> Materials obtained from End-of-Life Tyres - Qualitative criteria for the selection of whole tyres for the recovery and recycling processes.	<b>UNI CEN/TS 17510:2021</b> Materials obtained from End-of-Life Tyres - Determination of the specific surface of powders - Method based on krypton absorption.

The contribution given to the implementation of the **Conforeach - GVR project** is an example of all this. The afore-mentioned project analytically characterised over 160 substances contained in the rubber mixes of the granules for the first time. It aimed at verifying their compliance with the REACH Regulation and identifying their classification with reference to the CLP Regulation (classification, labelling, and packaging of substances and mixtures) in order to draft the **product safety sheets**. This is an obligatory step for the end-of-waste of the materials derived from waste flows. Born out of a proposal of Ecopneus to the Work Group n 14 of the UNI Environmental Commission on the materials derived from End-of-Life Tyres, the project saw the active participation of over 30 bodies that include chain consortia, companies of the treatment sector, and users. A team work for a **project that is unique at international level** and whose methodological approach and the results obtained will be used by CEN in the following years for the development of a Single European Regulation for the compliance with the REACH and CLP obligations. This, of course, will advantage the operators of the sector of ELT recovery in all EU Member states. Moreover, based on the knowledge gained during the Conforeach-GVG project, Ecopneus financed further tests to study the potential risks of eco-toxicity associated with the rubber mixes of ELT granules. The eco-tests were carried out on a statistically meaningful sample of granules and powders of rubber from ELTs and respected the methodological approach provided for by the CLP regulation. They confirmed the absence of acute and/or chronic toxicity of the mixes for aquatic environments. As already done with other research projects sponsored by Ecopneus, the methodology used and the results of the tests will be put at the disposal of the international scientific community by the means of their publication on specialised scientific magazines.

## FOCUS: THE ECOPNEUS EFFECT ON THE CHAIN OF ELT RECOVERY

The birth and set up of the activities of the National ELT management system has had important and positive effects also on the stabilisation and the growth of the companies of the national chain of this sector. Indeed, their growth is directly linked to the stabilisation of the flows of ELTs collected and correctly managed and treated. This can be translated into operative and financial stability. Ecopneus has strongly contributed to this dynamic, paying great attention to the development of solid and structured relationships with its partner companies that are selected by the means of e-tenders every three years.

An analysis of the dynamics of such collaborations and their results was carried out by the “Symbola Foundation for Italian Quality” in its “Ecopneus Effect” report in 2018.

This study identified six dimensions where the existence of an “Ecopneus Effect” can be observed and measured in the system of the companies involved:

**OCCUPATION.** Looking at the occupation rate of the workers of the companies that can be directly linked to the End-of-Life Tyre chain of Ecopneus, a growing trend can be observed. This positive trend has, of course, seen some fluctuation in time, but it is more evident if one compares it with the overall occupation rate of the same companies. That means that one must bear in mind also the staff that deal with activities that are not directly linked to the ELT chain.

**EFFICIENCY.** The operative management of the flows of material guaranteed by the Ecopneus System and the investments in innovation have had the effect of increasing the efficiency of the companies of the chain. Moreover, the same companies have improved the ratio between the incoming material and the resources they receive, thus allowing for an optimisation of the costs related to the ELT fees paid by Ecopneus to its partner companies.

**STABILITY.** The strict auditing system implemented by Ecopneus on its chain by the means of qualified external consultancy companies, the fully computerised management control, and the careful selection of companies have constantly improved the system. Indeed, the efficiency levels have shown a homogeneous improvement trend and they have become aligned among the companies of the chain.

**CIRCULARITY.** The growing quality of the products made with recycled rubber together with the increase of their fields of application and the opening of new markets have supported the development of the uses of these materials with a constant growth of the incidence of material recovery.

**AUTONOMY.** The companies of the chain have started a process of autonomous development from an organisational and productive point of view. In particular, the companies’ autonomy index grew steadily during the 2011-2016 period. This index is calculated as the ratio between the turnover related to the sales or products made with recycled rubber and the eco-fees the companies receive for their activities of ELT management.

**QUALITY.** It is possible to measure the growth in management quality and company processes by the means of the constant increase of the production of granules of greater quality and, thus, of greater value.

## THE RECOVERY MARKET



### The recycling of rubber from End-of-Life Tyres

Just like in a new tyre, the most valuable component of an End-of-Life tyre is certainly the mix of vulcanised rubber of its tread. Thanks to its high calorific power, rubber is very much appreciated as derived fuel in cement factories. However, it expresses its greatest potentialities as material: it is elastic and wear-resistant. It also resists to weather and chemical agents. If correctly managed, it is not dangerous for health and the environment and it can be recycled as **end-of-waste vulcanised rubber** in many products and applications. In this way, it contributes to the circular economy of many sectors, from the building to the manufacturing sector; from sports to infrastructures or the production of objects. Mixed with polymer resins or other thermoplastic polymers, the rubber granules from ELTs are used for the creation of anti-shock playgrounds or sports surfaces (gyms, athletics tracks, basketball or tennis courts). These granules can also be used to produce sound-proofing panels and anti-vibration supports for the building sector and for road signs, as well as many other objects of various uses.

**TYREFIELD** identifies the sports surfaces made with rubber recycled from End-of-Life Tyres. These surfaces are very performing, they last for long and are very versatile as they can be used for all sports at all levels - from professional surfaces to the local neighbourhood playgrounds. It is a consolidated market that could still expand to certain sectors that have development potential, such as horse riding and livestock farming with great advantages for animals' wellbeing.



**TYREPLAST** indicates the innovative compounds developed from the mixing of rubber powders from ELTs with thermoplastic polymers. When properly mixed by the means of specific compatibilisers, rubber powders transfer some of the typical characteristics of rubber, such as shock absorption and sound-proofing properties, to the polymeric matrix. This allows to increase and modify their functional characteristics. These materials are used in various sectors. Examples are: the automotive and building sectors, livestock farming, urban furniture, and road infrastructures.

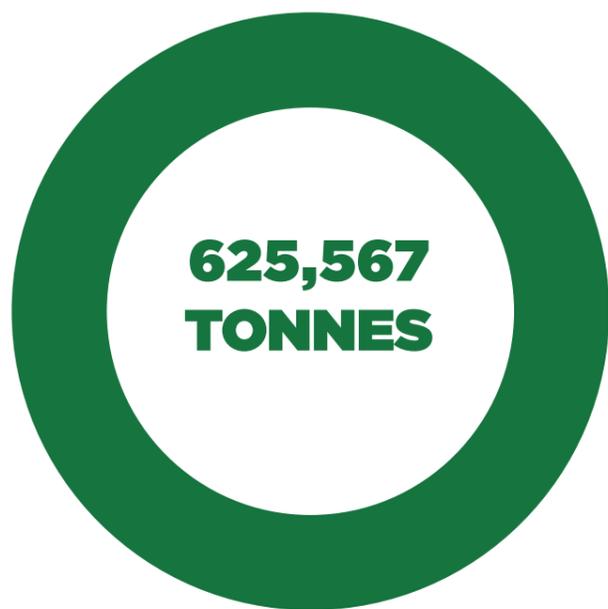


In their unbound form, the recycled rubber granules are used as infill in synthetic turf football pitches. If they are added to bitumen, instead, they allow to create asphalts that are more resistant than the traditional ones. A part of granules is also used by the rubber industry to mix them with virgin polymers. This market is still very limited, but it has a very large growth potential with reference to the development and the industrial implementation of valid devulcanising technologies. Indeed, these devulcanising technologies may allow to recycle the rubber from ELTs even in the formulation of mixes for the production of new tyres. Within this frame of opportunities, over **625 thousand tonnes of recycled rubber** have been produced by the chain in the ten years of activity of Ecopneus. Of this amount, over 50% has been used for the creation of sports surfaces and playgrounds. The majority of this amount has been used as infill for synthetic turf football or rugby pitches. Another 29% has been used by several sectors for the production of objects and components; 8% has been mixed for the production of rubber objects, 7% for the production of sound and vibration proofing panels in the building sector, and the remaining 3% in the sector of modified asphalts.

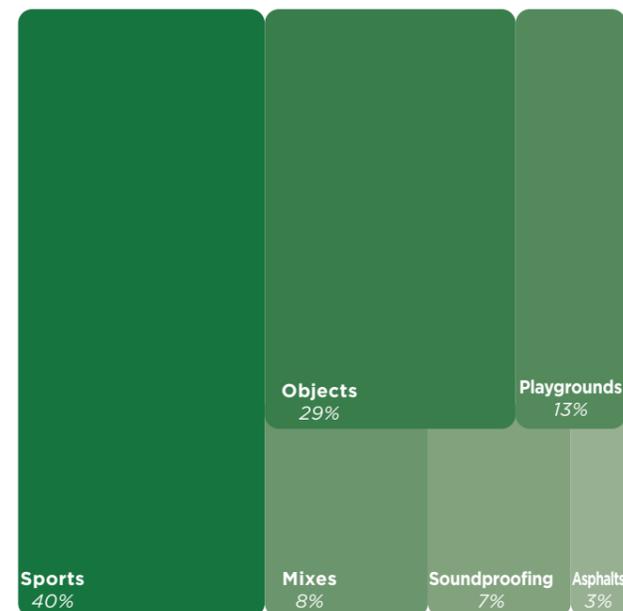
## USES OF GRANULAR VULCANISED RUBBER PRODUCED BY THE ECOPNEUS CHAIN IN 10 YEARS (t)

Uses	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	Overall amount	%
Asphalts	552	1,755	1,650	682	365	4,473	4,484	1,258	777	715	16,711	3%
Building Sector	1,541	4,901	4,608	4,066	4,308	4,738	4,472	4,891	6,247	6,573	46,346	7%
Mixes	1,724	5,483	5,154	3,091	6,976	4,711	5,786	8,455	7,292	3,407	52,080	8%
Objects	5,868	18,661	17,543	16,692	27,394	22,350	20,259	20,704	20,642	8,636	178,750	29%
Sports & Playgrounds	10,953	34,829	32,742	33,659	38,162	39,927	36,367	40,162	37,141	27,738	331,681	53%
<b>Total</b>	<b>20,639</b>	<b>65,630</b>	<b>61,697</b>	<b>58,190</b>	<b>77,205</b>	<b>76,200</b>	<b>71,368</b>	<b>75,470</b>	<b>72,100</b>	<b>47,069</b>	<b>625,567</b>	<b>100%</b>

## 2011-2020 PRODUCTION OF GVR FROM THE ECOPNEUS CHAIN



## BREAKDOWN OF GVR USE PER CATEGORY



## Focus on Legislation: The new End-of-Waste Regulation for granular vulcanised rubber derived from ELTs

The Decree of the Ministry of Ecological Transition nr. 78 of 2020, in force from 5th August 2020, states that the granular vulcanised rubber (GVR) produced from the treatment of end-of-life tyres in compliance with the provisions of the same Decree is entitled to the full status of end-of-waste product. This Decree had been very much waited for by the sector. It sets the specific criteria whereby GVR from end-of-life tyres ceases to be qualified as waste, in compliance with what provided for by the European waste regulation 2018/851/EC.

Before the publication of the MD 78/2020, granular vulcanised rubber derived from the treatment of end-of-life tyres was accepted as second raw material only based on authorisations issued to the treatment companies by the provincial or regional authorities of competence. This situation periodically caused jurisdictional problems and risked nullifying the efforts made to favour the recycling of this material.

### Eligibility criteria and control procedures

To guarantee the quality and safety of the end-of-waste GVR, the Decree lists the tests to be carried out on the samples taken from the batches of produced material. Among them, it describes also the chemical analyses to be executed, the testing method to be used, and the maximum value to be respected. These chemical tests are necessary to verify the content of heavy metals and other dangerous substances, there included the total PAHs. Other tests are provided for to assess the physical-geometrical characteristics the material must comply with. For example: the content of free steel, textile fibres, and other impurities. Moreover, the modalities and the sampling frequency of the production batches are stated for all the tests that are to be performed.

In addition to this, the Decree has clarified that end-of-waste granular vulcanised rubber can be produced only starting from post-use end-of-life tyres and the waste of vulcanised rubber coming from the production of new tyres or from the activities of tread reconstruction. It has excluded those ELTs that come from historical stocks or that show clear signs of burning. The Decree also provides for the procedures to be followed in order to avoid all potential contamination or mixing with other waste typologies.

### Uses and limitations

The end-of-waste GVR can be used exclusively for the specific scopes listed in an attachment to the Decree. This list comprises all the applications such material is already widely used for (structural components for the building and the mechanical sectors, means of transport, buildings and railway infrastructures, viability signs, urban furniture, playgrounds, sports surfaces, infills). It also describes the specific use of end-of-waste GVR as a modifying agent in the production of cement and bituminous conglomerates. The latter are of particular interest for the surfacing of roads with low noise emissions and greater service life.

### Conformity Declaration

As provided for by Article 4 of the Decree, the end-of-waste certification of the batches of granular vulcanised rubber is certified by the producer in compliance with the legislation in force. This Declaration is to be kept and made available to the competent Authorities in case of control. Moreover, the producers are to keep a sample of the GVR collected from each production batch for a period of 5 years. This is to allow the repetition of the analyses made on the same batch, unless the company possesses an EMAS or UNI EN ISO 14001 environmental management system.

# The support of Ecopneus to the market of the recycling of GVR

In pursuing the strategic objective of increasing the share of recycled granular vulcanised rubber and, at the same time, promoting quality and efficiency in the ELT treatment chain, Ecopneus has strongly supported the sales market of the granules. To do so, it has planned research and development projects as well as **training and communication campaigns**, both of general/transversal nature, and focused on specific applications.

Of particular relevance are the projects supporting specific recovery areas for the applications with great market potential, both in terms of the invested resources and for their strategic value. An example are sports surfaces and playgrounds, that are currently the main market for ELT granules. Ecopneus has contributed to their promotion, helping these applications to win over the diffidence of the sector operators and of the public opinion, both for what concerns the performances of the material and the perception of recycled rubber.

## STUDY OF THE PERFORMANCES OF SPORTS SURFACES - PRATO'S CASE HISTORY

Carried out at Prato's Centro Promozionale Polisportivo 2A, this research has compared the full impact of the four surfaces subject of the study on human performance, evaluated by the means of some field tests.



During this process, Ecopneus has set up partnerships with professional and amateur sports bodies and organisations at all levels, both national and local. Ecopneus has often started these partnerships by the means of its co-financing of **demonstration exhibits**. On the other hand, Ecopneus has promoted monitoring activities, **independent studies and research** projects aimed at testing the technical and athletic performances of the material as well as the absence of any risk for our health. Particularly worthy of notice are the research projects set up to evaluate the health risks associated with the presence of polycyclic aromatic compounds (PAHs) in ELT-derived rubber granules used as infill for synthetic turf football pitches. These studies are to be added to the ones on the technical performances of sports surfaces and their impact on athletes' biomechanics performed in partnership with UISP and with the technical support of the University of Tor Vergata. Carried out in collaboration with specialised bodies, laboratories, and research centres of primary importance, these research projects have confirmed the **compliance with the REACh regulations** for what concerns the presence of PAHs in granules. This is a fundamental condition for the classification of this material as end-of-waste. On the other hand, these studies have confirmed the low risk level for the health of athletes

and the workers of the sector that are subject to prolonged exposure to this material. The **Mario Negri Institute of Milan** was involved in this final and extremely delicate phase of investigation. They examined the risks for our health associated with the possible migration of these substances into biological fluids. They found that the risk is overall lower than the minimum value that the international scientific community considers as acceptable. Given the adopted innovative research approach and the importance of the results, the research was subject to publication: "*Physical and chemical characterization of representative samples of recycled rubber from end-of-life tires*", **A. Re Depaolini et al., Chemosphere 184, 2017.**

Another market of particular interest for the recovery of ELT-derived rubber granules concerns their use in applications for the building sector. Indeed, thanks to its characteristics of elasticity, sound-proofing, resistance to loads, and durability, ELT-derived rubber is an excellent material for the limitation of the transmission of noise and vibrations inside buildings.

Within this scope, the support actions of Ecopneus consisted in the publication of a series of Technical Books about the acoustic, thermal, and structural properties of the materials in recycled rubber. These Books have been developed in collaboration with Vie En.Ro. Se. Engineering. Moreover, Ecopneus contributed to the development of this application with the creation of demonstration exhibits. Among the many projects, the acoustic renovation of the Sala Gavazzeni of the Toscanini Auditorium in the city of Parma is of particular importance. This project was carried out using sound-absorbing panels made with granules from ELTs.

## THE USE OF RECYCLED RUBBER IN THE BUILDING SECTOR - ACOUSTIC, THERMAL, AND STRUCTURAL PROPERTIES

Written with the technical support of Vie En.Ro. Se Engineering, this Book describes the acoustic, thermal, and structural properties of the materials made from recycled rubber. This is done by the means of a typological study and the cataloguing of the recycled rubber-derived products developed for the building sector and divided by category of use.



The market of modified asphalts is by far the one with the greatest development potential for the circularity of rubber polymer from ELTs. Rubberized asphalt technologies have been known for over 40 years and are very popular in the United States. Indeed, the American consolidated experience has allowed an in-depth evaluation of the advantages linked to the use of this application.

The use of powders from ELTs as a binding polymer in bituminous conglomerates allows to create roads that are more resilient to heavy traffic and that have a longer service life. Moreover, this technology allows to reduce energy and material consumption, as well as maintenance costs that are borne by the public administration. Moreover, the presence of rubber polymers in the bituminous mixes allows to obtain **low noise emission conglomerates**, with a subsequent reduction of the noise caused by traffic.

Spain is the European country that has mostly invested in this technological solution, with over 1,600 km of roads surfaced in few years. This result was achieved thanks to the intervention of the Spanish Government that clearly prioritised this application for the recovery of ELTs in a national action plan. Today, in Italy there are about 600 km of roads surfaced with this technology. This is way too little if one compares it to the over 650 thousand km of roads of the national road grid, their state of decay - above all in urban areas - and the collective benefits that could derive from an investment plan for road maintenance carried out with innovative construction technologies.

Within this framework, the promotion of asphalts modified with ELT-derived rubber has always been a priority in the strategies of Ecopneus. Indeed, it has supported interventions that aimed at the sharing of their know-how; it has supervised the writing of technical publications for the sector; it has organised and participated in trade fairs, conventions, and seminars dedicated to the designers, the companies of the sectors, and the Public Administration. All this is to be added to the development of testing and technical verifications of the performances of this technology in support of the Public Administration, the technical bodies, and the companies of the sector.

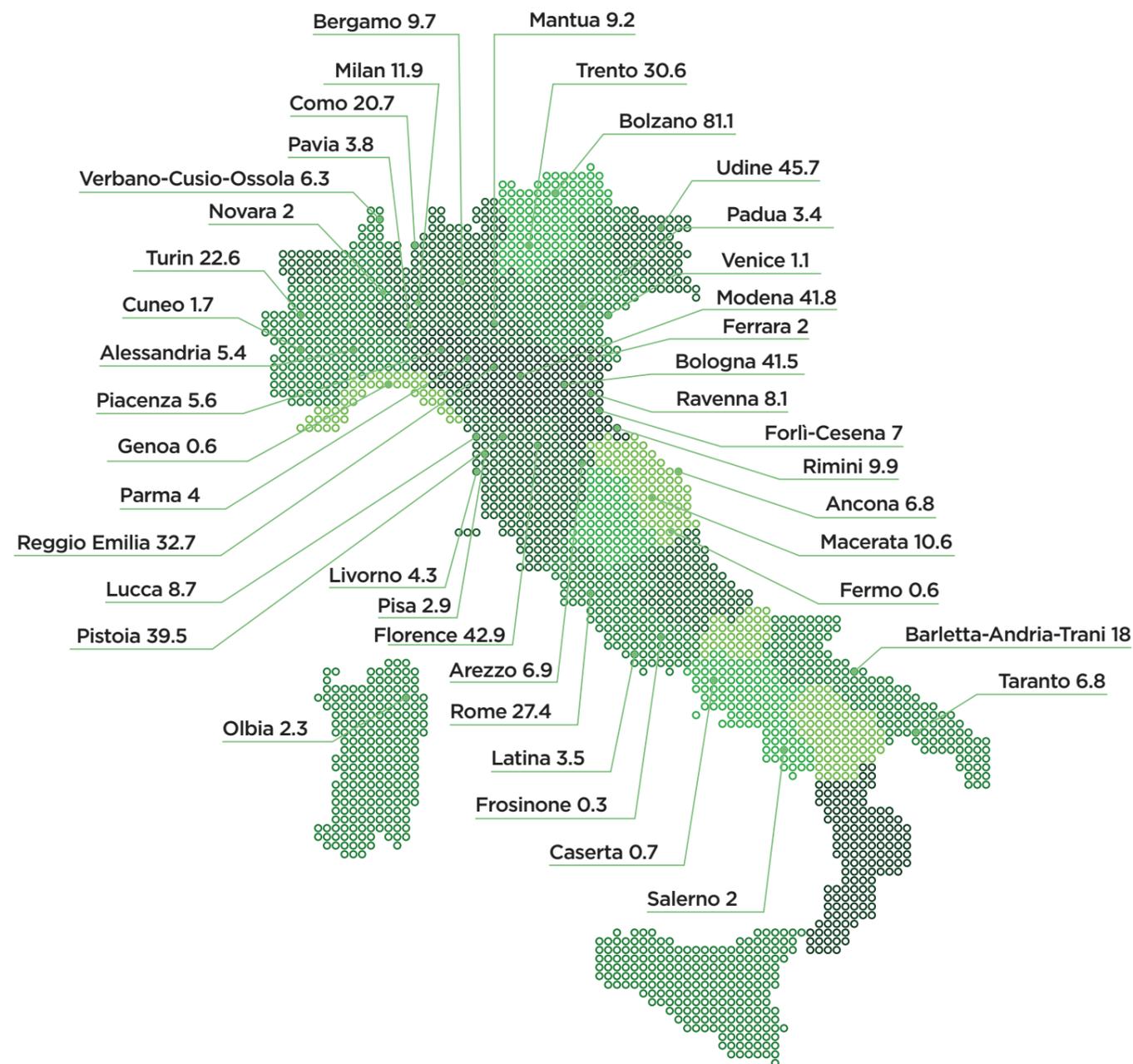
Another area of market development Ecopneus has recently taken into serious consideration makes reference to the applications dedicated to animals' wellbeing, especially horse riding structures and installations. In particular, several research projects have been carried out in collaboration with the Department of Veterinary Medicine of the University of the Studies of Perugia. They aimed at investigating the performances of the material and its applications. They also wanted to develop innovative installations made with recycled rubber for outdoor training fields and for the walkways of horse stables.

Some interventions have been carried out in two horse riding centres in Orvieto (TR) and Todi (PG). Another one was in the Veterinary Military Centre of the Italian Army in Grosseto. The use of recycled rubber instead of sand in outdoor training fields avoids the dispersion of dust in the air and its related risks for the health of both horses and riders. The rubber surfaces for horse stables, instead, guarantee comfort, insulation, and hygiene.

Finally, the **"Catalogue of the products made with rubber recycled from ELTs"** is a very meaningful project activated by Ecopneus from the very beginning of its activities. The Catalogue is an online product showcase at the disposal of the companies that use GVR in their production.

The Catalogue is promoted by Ecopneus and made in collaboration with MATREC, a consultancy and research company specialised in material circularity. The Catalogue allows to access updated technical and sales information through a research based on companies, geographical location, certifications, and end-applications: from the building sector, to sports; from infrastructure, to objects and design.

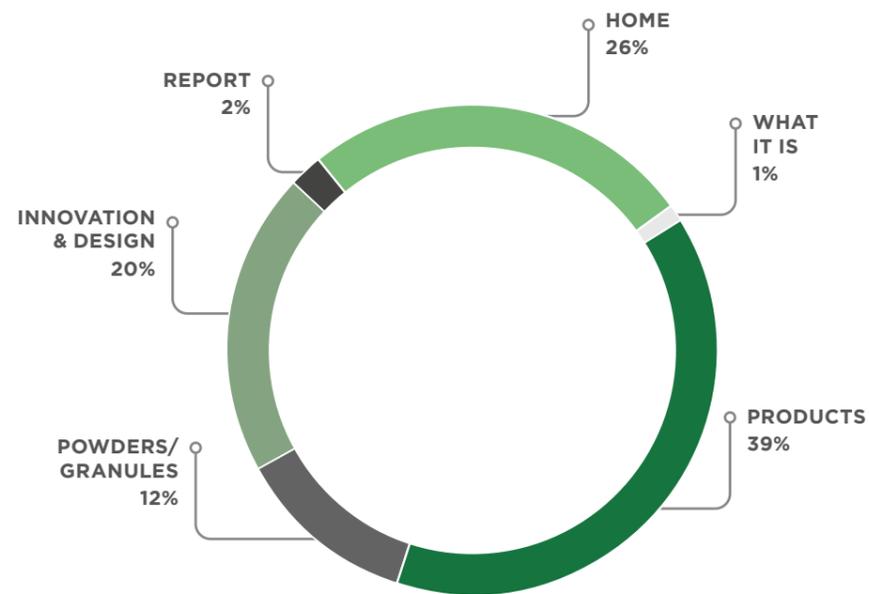
## STRETCHES OF ROAD SURFACED WITH ASPHALT MODIFIED WITH RUBBER FROM ELTS



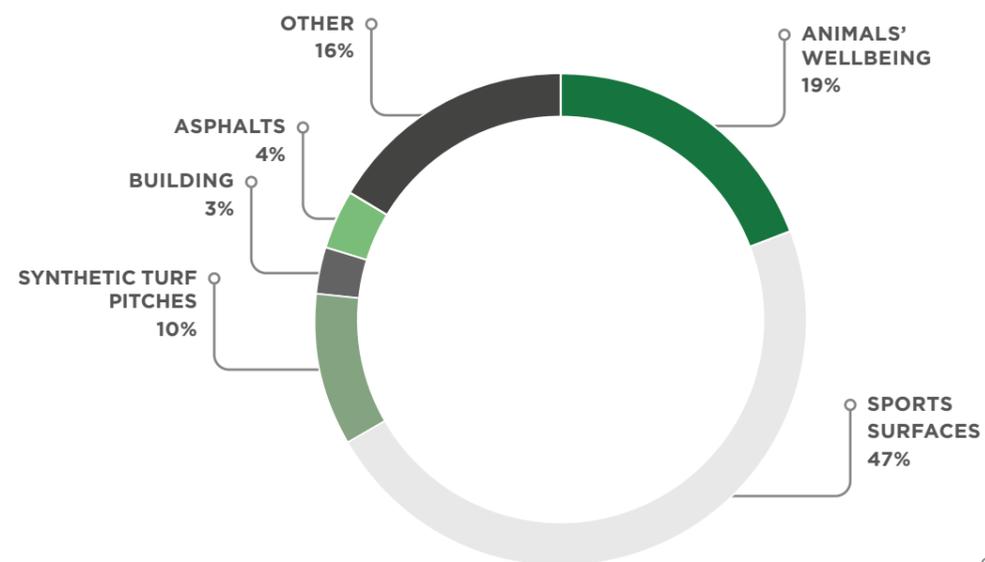
TOTAL  
**592.3km**  
KM/LANE, PER  
PROVINCE

## 2018-2020 STATISTICS OF USERS' ACCESS TO THE CONTENTS OF ELT CATALOGUE

ELT catalogue statistics	Average
Users' number	6,423
Nr. Sessions	8,674
Nr. visualised pages	50,027
Pages per session	5,8
Permanence time	2,7
New users	85.2%
Returning users	14.8%
Bounce rate	1.2%



In addition to these figures, the success rate of the initiatives of promotion of the applications of granular vulcanised rubber derived from ELTs organised by Ecopneus can be measured by the hundreds of emails asking for technical and financial information sent to and directly managed by Ecopneus.



Companies' fields of interest in the requests for information about the applications of GVR

## TYREFIELD SURFACES

FOOTBALL  
BASKETBALL  
TENNIS  
HORSE RIDING  
PLAYGROUNDS



# The recovery of ELTs as derived fuel

In an advanced strategy of circular economy, waste management must prioritise prevention, reuse, and recycling, whilst energy valorisation must become more and more residual. However, as it is described in the European Action Plan for the circular economy, waste energy recovery is functional for the closing of the cycle in a transitional phase such as the one we are in now. Indeed, this guarantees the full recovery of all the amounts of waste managed.

Within this framework and together with its efforts in recovering rubber polymers as material, Ecopneus has worked hard for identifying the best solutions for the recovery of ELTs as derived fuel for those amounts that are not absorbed by the recycling market every year.

In the Ecopneus system, the recovery of ELTs as fuel is mainly carried out with co-processing technologies in cement factories. This option allows to exploit the high calorific power of rubber that is comparable to the one of pet-coke. Moreover, it allows to recycle the combustion of inorganic residues in the produced cement. These residues represent up to 25% of the weight of an ELT and their recycling allows to avoid the use of further virgin raw materials with an environmental and financial benefit for both companies and society.

In 10 years of activity of Ecopneus, the amounts of ELTs recovered with the co-processing technology in the production of cement are equal to 1.1 million tonnes. This figure is equivalent to 80% of the total of ELTs recovered as fuel. About half of them has been recovered on the Italian territory, whilst the remaining part was sent to foreign cement factories, due to the limited availability of installations in Italy that may use this material.

As for rubber recycling, also the recovery of ELTs as fuel requires accurate preparation. Ecopneus has approached this activity pursuing quality, accuracy, and control.

Indeed, the majority of cement factories that use ELT-derived fuel has asked for years for the compliance with strict specifications, both from a dimensional and morphological point of view, as well as with reference to homogeneity of composition according to the process stage they are used in. With this respect, the quality of ELT-derived fuels recovered in cement factories is a fundamental prerequisite for the good functioning of the plants and for the expected qualities of the end-product.

## BOX: Waste co-processing

Co-processing is a production technology that uses waste or sub-products as materials in the place of virgin raw materials or as a source of energy replacing fossil fuels (or both). For this reason, according to UNEP, co-processing falls within the prerogatives of sustainable development and it is identified as a useful solution, in particular if applied to the cement business.

*Co-processing in resource-intensive industries involves the use of waste in manufacturing processes for the purpose of energy and resource recovery, reducing the use of conventional fuels and raw materials through substitution. [...] Co-processing is a sustainable development concept based on the principles of industrial ecology focussing on the potential role of industry in reducing environmental burdens throughout the product life cycle [and] make one industry's waste another's raw material. Within the cement industry the use of wastes as fuel and raw materials is a positive, forward-thinking example.*

UNEP, 2011

This role has been recognised also by the European Commission. Indeed, the European Commission indicates co-processing as a recovery option to be preferred to the simple waste-to-energy process, thanks to the combined recovery of both energy and materials in the productive process.

*[...] In certain production processes such as co-processing, waste can be used in an operation combining two waste management recovery options at the same time. The energy content of the waste is recovered (R1 operation) as thermal energy, thus substituting fuels, while the mineral fraction of the waste can be integrated (hence recycled) in the matrix of the product or material produced, cement clinker, steel or aluminium[.]*

*Guidance on the interpretation of key provisions of Directive 2008/98/EC on waste.*

**TYREFUEL** identifies the ELT recovery flows in the production of cement and in the generation of electricity in Italy and, above all, abroad. The amounts of ELTs that do not find an application in material recovery in Italy are sent to this market; however, Ecopneus pays the same attention to the quality and sustainability of the management of these ELTs. In this case, ELTs represent a valuable fuel, destined to qualified and reliable plants that are characterised by high quality standards.



**TYREFUEL**<sup>®</sup>

In Europe, the regulation of reference for the classification of the products from the shredding of ELTs is the UNI EN 14243 regulation, "Materials produced from End-of-Life Tyres". This regulation has standardised the dimensional categories of the products derived from shredding activities and indicates the operative modalities to be followed for the characterisation of the production batches. The regulation was approved in 2019. The experts of Ecopneus participated in the UNI work tables for its drafting. It is composed of three parts, the third one makes reference to "Shreds, primary cuts and chips- Methods for determining their dimension(s), there included the dimensions of the protruding filaments".



**The role of circularity of materials in the mitigation of climate change**

Ten years ago, greenhouse gases ranked third in the top ten global risks for the economy analysed by the *World Economic Forum*. They followed income disparity and the financial stability of States' budgets.

Today, the risks linked to climate change and the protection of the environment in all its possible variations dominate the same ranking, both for the possibility of them becoming true, and for the impacts they may have on the economy.

*The World Economic Forum 2021 Global risk landscape*

**TOP RISKS**

by likelihood

- 1 Extreme weather
- 2 Climate action failure
- 3 Human environmental damage
- 4 Infectious diseases
- 5 Biodiversity loss
- 6 Digital power concentration
- 7 Digital inequality
- 8 Interstate relations fracture
- 9 Cybersecurity failure
- 10 Livelihood crises

**TOP RISKS**

by impact

- 1 Infectious diseases
- 2 Climate action failure
- 3 Weapons of mass destruction
- 4 Biodiversity loss
- 5 Natural resource crises
- 6 Human environmental damage
- 7 Livelihood crises
- 8 Extreme weather
- 9 Debt crises
- 10 IT infrastructure breakdown

In the results of the 2020 analysis, the second place of the **climate action failure** for both rankings is particularly shocking. It makes reference to that complex set of policies and measures that are necessary for the reaching of the objectives that are part of the 2015 Paris Climate Agreement and for keeping the average growth of global temperatures below 1.5 °C.

The risk of failure has to be avoided with a fundamental change of pace that would allow all those States that have signed the agreement to achieve their ambitious objectives of reduction of the emissions. This would allow to avoid the occurrence of recurring crises of similar proportions to - if not worse than - the one we are currently living due to the Covid-19 pandemic.

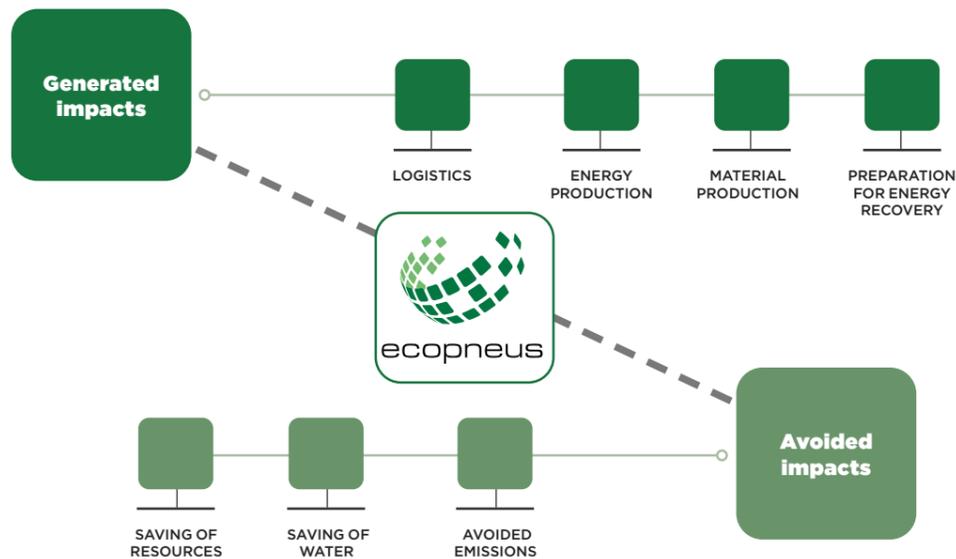


# The environmental balance of 10 years of circularity of ELTs in the Ecopneus system

The circularity of ELTs guaranteed by the Ecopneus system generates important environmental benefits that can be quantified with *Life Cycle Assessments* in the logic of avoided products. This can be done by the means of calculating the difference between the negative impacts generated by the several recovery options and the benefits associated with the avoided production and consumption of equivalent amounts of virgin raw materials and fuels in the various sectors.

## The reporting of the environmental performance of the life cycle of ELT recovery in the Ecopneus system

Variables of the life cycle assessment of the recovery of ELTs in the Ecopneus system



In the life cycle assessment developed for Ecopneus, the processes taken into consideration for the evaluation of the **negative impacts** associated with the recovery activities concern: all management phases of the logistics of ELTs; all treatment activities; the burning of recovered ELTs as fuel considering the part of emissions of the natural rubber component present in tyres as carbon neutral.

The **environmental benefits** of the life cycle deriving from the recycling and the energy recovery of ELTs in the Ecopneus system are evaluated with the methodological approach of the replaced product. This calculates the **avoided impacts** from the non-production and non-consumption of amounts of materials equivalent to the ones recovered with different technologies.

Following this logic and starting from the amounts of ELTs managed by Ecopneus during its 10 years of activity, the recovery performance has been calculated based on the three footprint indicators that best represent the categories that impact on circularity: Carbon footprint, Material footprint, and Water footprint.

It is to be noted that a negative value of the performance indicates that the impacts avoided thanks to the recovery are higher than the impacts generated by the activities associated with the same recovery.

# GREENHOUSE GASES - THE CARBON FOOTPRINT BALANCE

Carbon Footprint is measured in kg of CO<sub>2</sub> equivalent. It represents the total amount of greenhouse gases directly and indirectly released into the atmosphere during the life cycle of a product, from the extraction of raw materials, to their transformation into semi-finished and finished products, up to the management of their related waste. It is the indicator of reference used by the international community for the assessment of the climatic impact of products. Among the indicators of reference, there is also the *European Commission's Product Environmental Footprint*.

The contribution to the reduction of greenhouse gases associated with the recovery of over 2.2 million tonnes of ELTs managed by Ecopneus during the first 10 years of its activities amounts to 3.36 million tonnes of CO<sub>2</sub> equivalent saved.

Considering the fact that the average CO<sub>2</sub> emissions of the vehicles that make up the obsolete and over-dimensioned national fleet are equal to 167 grammes of CO<sub>2</sub> for every km travelled (Ispra, 2018), such benefit is the equivalent of the direct emissions of 1.9 million automobiles travelling 10,000 km in a year.

## Carbon footprint balance of the Ecopneus management of ELTs from 2011 to 2020

Carbon footprint balance (t CO <sub>2</sub> eq)		
	Total	1 t ELTs
<b>Balance of avoided emissions</b>	<b>-3,362,192</b>	<b>-1,52</b>
<b>Generated emissions</b>	<b>t CO<sub>2</sub>eq</b>	<b>%</b>
Logistics	203,696	9.7%
Treatment	204,652	9.7%
Combustion for energy recovery	1,694,045	80.6%
<b>Total generated emissions</b>	<b>2.102.392</b>	
<b>Avoided emissions</b>	<b>t CO<sub>2</sub>eq</b>	<b>%</b>
Recycling of granules and powders from ELTs	-1,463,086	26.8%
Recycling of steel in steel mills and in cement	-425,514	7.8%
Replacement of pet coke and other fossil fuels	-3,575,984	65.4%
<b>Total avoided emissions</b>	<b>-5,464,585</b>	

## RESOURCES - THE MATERIAL FOOTPRINT BALANCE

Material Footprint is expressed in kg of materials. It represents the total flows of mineral and fossil resources that have been extracted for the production of specific goods or services during their life cycle: from the extraction of virgin raw materials, to their transformation into semi-finished and finished products, up to the management of their related waste. It is the indicator of reference used by the international community for the assessment of the impact of products on resources. Among the indicators used, there is the Environmental Product Declaration - International EPD System - and the European Union's Beyond GDP initiative.

The contribution to the reduction of the collection of mineral resources associated with the recovery of ELTs in the first 10 years of activity of the Ecopneus system amounts to almost 3.3 million tonnes of non-used materials. This is equal to 1.5 times the amounts of recovered tyres. In other words, considering that the estimated weight of the Tour Eiffel reported in several publications is slightly higher than 10 thousand tonnes, such benefit is the equivalent of 325 towers.

### Material footprint balance of the Ecopneus management of ELTs from 2011 to 2020

Material footprint balance (t of materials)		
	Total	1 t of ELTs
<b>Balance of consumption of resources</b>	<b>-3,279,853</b>	<b>-1,481</b>
<b>Resource consumption</b>	<b>t of materials</b>	<b>%</b>
Logistics	284,296	54.6%
Treatment	90,114	17.3%
Combustion for energy recovery	145,900	28.0%
<b>Total of resource consumption</b>	<b>520,310</b>	
<b>Saved resources</b>	<b>t of materials</b>	<b>%</b>
Recycling of granules and powders from ELTs	-1,328,888	35.0%
Recycling of steel in steel mills and in cement	-1,106,126	29.1%
Replacement of pet coke and other fossil fuels	-1,365,150	35.9%
<b>Total saved resources</b>	<b>-3,800,163</b>	

## WATER - THE WATER FOOTPRINT BALANCE

Water Footprint is measured in m<sup>3</sup> of water. It measures the water scarcity linked to the net amounts of freshwater used and its pollution (degradation, eutrophication, toxicity and acidification) caused by the manufacturing of a specific product or service during its life cycle: from the extraction of virgin raw materials, to their transformation into semi-finished and finished products, up to the management of their related waste. The method of reference used for the calculation of Water Footprint is the one developed by Hoekstra and collaborators - University of Twente, The Netherlands - known as Water Scarcity.

The contribution to the reduction of the consumption of water associated to the recovery of ELTs in the first 10 years of activity of the Ecopneus system amounts to over 15.5 million cubic metres. This equals to 6,300 Olympic-sized swimming pools. In other words, it is higher than the daily average water consumption of all the Italian population (Istat, 2018 water census).

### Water footprint balance of the Ecopneus management of ELTs from 2011 to 2020

Water footprint balance (m <sup>3</sup> of water)		
	Total	1 t of ELTs
<b>Balance of water consumption</b>	<b>-15,591,668</b>	<b>-7,041</b>
<b>Water consumption</b>	<b>m<sup>3</sup> of water</b>	<b>%</b>
Logistics	1,155,217	23.9%
Treatment	1,031,925	21.3%
Combustion for energy recovery	2,654,190	54.8%
<b>Total of water consumption</b>	<b>4,841,333</b>	
<b>Saved water</b>	<b>m<sup>3</sup> of water</b>	<b>%</b>
Recycling of granules and powders from ELTs	-8,182,170	40.0%
Recycling of steel in steel mills and in cement	-4,965,888	24.3%
Replacement of pet coke and other fossil fuels	-7,284,943	35.7%
<b>Total saved water</b>	<b>-20,433,000</b>	

## A COMPARISON BETWEEN THE RECOVERY OF ELTs AS MATERIALS OR AS FUELS

The recovery of End-of-Life Tyres in Italy as well as in all the countries of the European Union is carried out by the means of the recycling of materials into products and applications or with their transformation into tyre derived fuels (*TDF*) for the production of energy in replacement of other fossil fuels.

Thanks to the replacement of virgin raw materials that are often imported, both recovery modalities determine a benefit from an environmental, financial, and occupational point of view.

However, as highlighted in a study carried out by the Sustainable Development Foundation, the benefits associated with the recycling are by far higher than the ones associated with energy recovery. The study compares two hypothetical alternative scenarios of ELT recovery. One is related to the 100% recycling of rubber granules and steel that are part of a tyre (*full recycling*). The other scenario makes reference to the 100% use of shredded ELTs as fuel for the production of cement as a replacement for pet-coke (*full energy recovery*).

For what concerns the environmental advantages, the studies based on the methodology of the European Commission's Product Environmental Footprint -PEF- have shown how the recycling of materials determine net benefits that are clearly higher for all the categories taken into consideration. For example, with reference to the climate change indicator, the avoided greenhouse gas emissions of a life cycle in a 100% recycling scenario are two times higher than the scenario where 100% of ELTs are recovered as fuel in a cement factory.

In other words, taking an amount of 400 thousand tonnes of ELTs as a point of reference (approximately the Italian average annual production), the indicator of the greenhouse gas emissions indicates a positive benefit in favour of recycling of about 477 thousand tCO<sub>2</sub>eq. This is equal to the emissions of 300 thousand automobiles that travel 10,000 km in a year.

A return that is definitively more favourable to the *full recycling* scenario can be found from a financial and occupational point of view. The study evaluated this scenario by making reference to the Input-Output Table methodology and the Social Accounting Matrix (SAM).

In particular, the estimate of the differential balance of the direct, indirect, and induced effects associated with the chain management expenditure and the savings on imports of virgin raw materials in both scenarios favours the *full recycling* scenario with over 360 million euros of added value and about 6 thousand additional jobs.

### Balance of greenhouse emissions in a 100% recycling di scenario vs. 100% recovery as fuel



Note 1 "Environmental, financial, and occupational impacts of alternative ELT recovery scenarios in Italy". This study has been carried out by the Sustainable Development Foundation on behalf of Ecopneus, in collaboration with Lca-Lab (A spin-off of Enea located at the ENEA E. Clementel research centre of the city of Bologna) and Cies (Research and Study Centre on issues related to work, economy and development). The full study is available for consultation upon request.



**FINANCIAL  
BENEFITS**

### The circularity of the Italian system

Ecopneus is a promoter of the **Circular Economy Network**. According to its 2021 report, the overall Italian performances are higher than the ones of the main economies of the Continent with regards to the monitoring of the circular economy performances of the EU member states.

Naturally, this is a record of the system. For it to be confirmed in the course of time, it requires a constant effort and far-reaching objectives from the part of all its stakeholders: Institutions, companies, category associations, social bodies, universities, workers and consumers.

### Ranking of the five most important European economies with reference to the Overall Performance Index of the circular economy

	2021	Variation compared with 2020
1° Italy	79	↓
2° France	68	↓
3° Germany	65	↑
4° Spain	65	↑
5° Poland	54	↓

**The Circular Economy performance Index** evaluates the overall circular economy performances of Countries. It is calculated adding the scores obtained from the four performance indexes of the areas taken into consideration.

Source: Circular Economy Network

The figures related to the circularity rate and the import/export balance of the waste-recovered materials are of particular importance upon calculating the Index. These two aspects strongly depend on the internal market of second raw materials. Their virtuous functioning can allow to reduce the imports of energy and virgin raw materials. Moreover, they allow to retain an important part of the produced wealth inside the Country's system. This is strategically important extra added value in a country as resource-poor as Italy is.

# The saving on imports thanks to the ELT recovery in the Ecopneus system

The recovery of end-of-life tyres can help Italy to reduce its dependence on foreign imports of materials and energy. Its contribution can be calculated starting from the amounts of recovered ELTs and from the average market price of the materials replaced in productive cycles, such as virgin raw rubber in products, iron scraps in the production cycle of secondary steel, or pet-coke and iron ore in the cement production process.

With reference to the average market prices recorded for these four raw materials, the cumulative savings on imports of virgin raw materials in 10 years of ELT recovery in the Ecopneus system amounts to about **1.15 billion euros**.

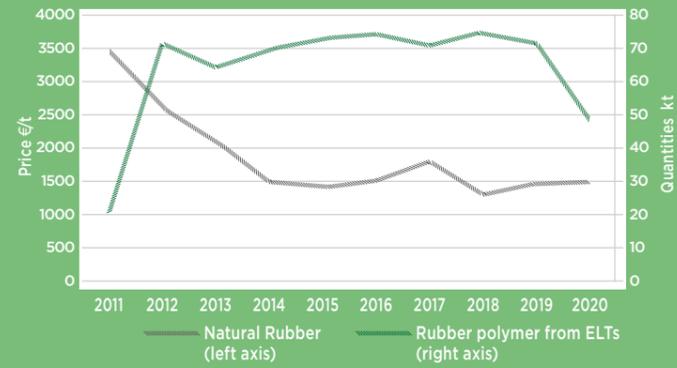
## TREND OF RAW MATERIAL PRICES AND QUANTITIES OF EQUIVALENT MATERIALS RECOVERED FROM ELTS

### Annual and cumulative savings on imports of virgin raw materials from ELT recovery



Given the commercial value of virgin rubber, 92% of such savings is determined by the recovery of ELT-derived rubber polymer. This further confirms how such typology of recovery offers the main advantages for society even from a financial point of view.

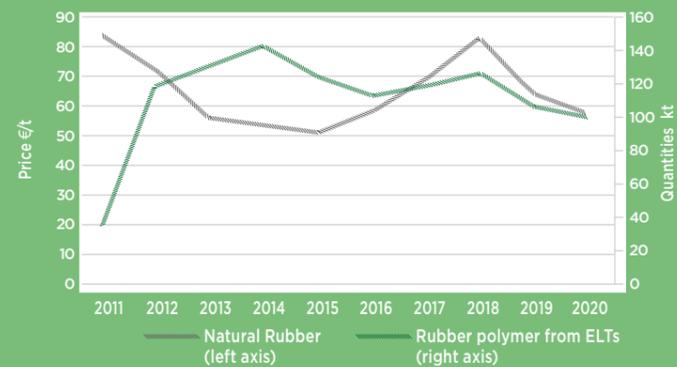
### Replacement of natural rubber



### Replacement of iron scrap



### Replacement of carbon coke



### Replacement of iron ore



# The financial value of eco-fees

In addition to these benefits, it is necessary to consider also the ones related to the financial value generated by the eco-fees and distributed to the ELT recovery chain and to the other bodies that have contributed to the reaching of the management objectives of Ecopneus in various ways.

With reference to the reclassification proposed by the Global Reporting Initiative (GRI), the analysis of the financial statements of Ecopneus from 2011 to 2020 shows that they managed a total of 624 million euros of eco-fees. Of these, over 610 million were distributed among the stakeholders. 538 million were used to compensate the companies of the chain for their recovery, collection, transport, and treatment activities.

Another 52 million euros were used for the supply of services linked to management, as well as for research and development projects, the co-financing of demonstration exhibits of products, the communication activities related to the ongoing projects, specialised consultancies, etc.

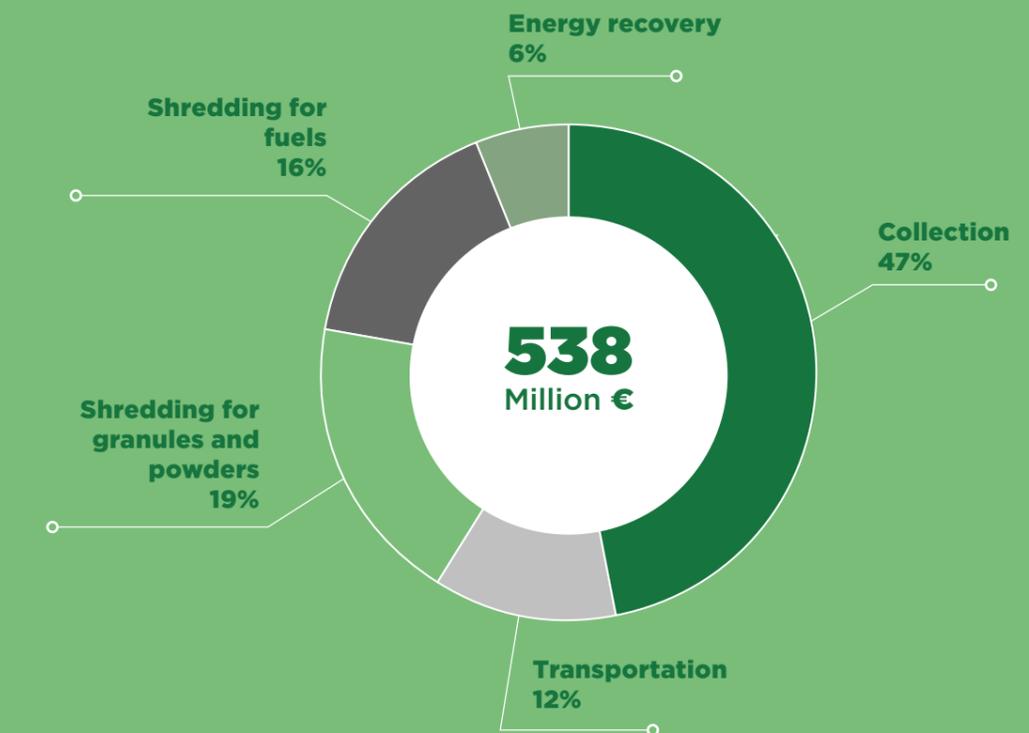
The overall cost of the members of staff was equal to little more than 10 million euros. No money was paid for remunerating the Ecopneus executive bodies (i.e.: the partners represented in the BoD of the consortium), as they are not paid for their contribution to management.

The expenditure linked to taxes and other levies to be paid to the Public Administration amounted to a little less than 8 million euros; whilst the interests for the return on capital cost a little more than one million euros.

## The financial value of eco-fees in 10 years of Ecopneus management

	2011- 2020
<b>ECONOMIC VALUE GENERATED</b>	<b>624.4</b>
Revenues from eco-fees	623.7
Other revenues	0.7
<b>ECONOMIC VALUE DISTRIBUTED</b>	<b>611.1</b>
Compensation of the operation chain	538.1
Projects and communication	32.4
Other costs for services	21.0
Personnel	10.3
Executive Bodies	0.0
Taxes and levies to the PA	7.9
Interests to capital providers	1.3
<b>ECONOMIC VALUE RETAINED</b>	<b>10.8</b>
Reserve ex art. 3 MD 81/11	1.6
Retained Profits/losses (art 228 c. 3bis DL 152/06)	9.2
Amortisations and devaluations	3.2

## Breakdown of expenditure for ELT recovery activities



In the reclassification scheme proposed, the net worth of Ecopneus associated with savings and reserves from operating surpluses brought forward in the course of the years (economic value retained) amounted to a little less than 11 million euros on 31<sup>st</sup> December 2020. This amount is net of the cumulative value of balance sheet items annually dedicated to amortisations and devaluations of tangible and intangible assets<sup>2</sup>.

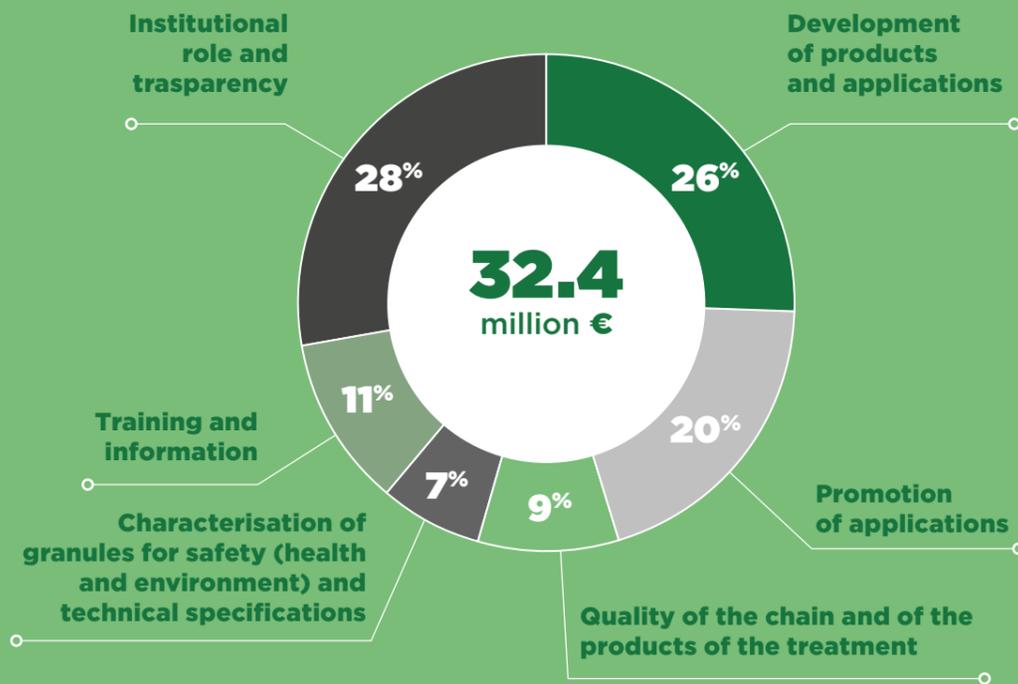
If one looks in detail to the average allocation of management costs in the first 10 years of activity of Ecopneus, 59% of the 538 million euros distributed to the recovery chain was allocated to logistics expenses and, in particular, to ELT collection. Indeed, this is probably the most strategic step of the recovery chain, as it allows to avoid the formation of stocks of end-of-life tyres at tyre dealers - with their related risks. It is precisely with this in mind that Ecopneus has always contributed to collect ELTs well beyond its legal target. Moreover, it has always assured the collection service even for those tyre dealers that are harder and, so, also more expensive to reach - such as the ones operating in smaller islands or on remote mountain locations.

19% of the afore-mentioned amount of money was, instead, spent to pay for the treatment of ELTs for the recycling of rubber granules and powders. 16% was dedicated to the treatment that turns ELTs into derived fuels, and the remaining 6% for their subsequent energy recovery carried out in authorised plants, both in Italy and abroad.

Note 2 As per the reclassification proposed by the Global Reporting Initiative, the balance sheet items related to amortisations and devaluations do not contribute to the economic value distributed.

The detailed analysis of the breakdown of the 32.4 million euros spent by Ecopneus in projects aimed at supporting the market of recycled rubber from ELTs and informing about the system is very meaningful. The investment has mainly concerned activities supporting the recycling of ELT polymers. This has been achieved with the development and promotion of products and applications, as well as with the co-financing of demonstrative infrastructure (e.g.: for sports, the building sector, road surfaces). Ecopneus has also helped to consolidate the quality of the products of the treatment. It has also financed research projects aimed at the characterisation of the materials derived from ELTs, both with reference to the risks of environmental safety and health, and for the drafting of technical specifications for the sector.

**Breakdown of expenditure of projects and support of the market of rubber recycled from ELTs**



The training and information projects promoted by Ecopneus address both the external stakeholders' network (among which, the Public Administration) and the internal ones (e.g. the companies of the chain and the ELT generation points). The external stakeholders have been reached by the means of organising and participating in specific events, seminars, trade fairs as well as writing and divulging technical publications. The internal stakeholders, instead, have been involved in the Ecopneus projects by the means of chain conventions, workshops and other specific initiatives. Important resources have been spent for consolidating and promoting the identity of the consortium as a private company of public utility that is also the main player in the management of end-of-life tyres in Italy. It has informed the public about its role within the scope of the circular economy of the tyre sector and their many activities; they have also reported their achievements in a transparent and transversal way.

## The Terra dei Fuochi Project

Within the scope of the institutional projects, the commitment of Ecopneus for the Terra dei Fuochi is of particular importance for its environmental and social impact. "Terra dei Fuochi" (Land of Fires) is an expression that was first used in Legambiente's Eco-Mafias report in 2003. It made reference to a vast territory between the provinces of Naples and Caserta, where organised crime dumped tonnes of illegally managed toxic waste, which often ended up burnt using end-of-life tyres for igniting the fires. In support of a concrete clean-up of this area, in 2013 Ecopneus signed a "Memorandum of Understanding for the implementation of interventions of collection and management of end-of-life tyres abandoned in the territories of the Provinces of Naples and Caserta" with the Ministry of Ecological Transition, the Person in charge for the Terra dei Fuochi nominated by the Ministry of Internal Affairs and the Councils of the cities of Naples and Caserta. Under this Memorandum, Ecopneus invested 4 million euros that came from the reserve of eco-fees the partners had upon the start-up of the national system. As per the Memorandum, derogating from the provisions of MD 82/2011 (now: MD 182/2020), Ecopneus carries out the collection of ELTs free of charge from the storage centres authorised by and agreed with the involved Councils. Moreover, Ecopneus, at its own expense, takes care of the transportation of ELTs to the transformation centres where they are recovered. In certain cases, Ecopneus has also freely supplied the recycled rubber derived from the treatment of the ELTs collected on the Councils' territories for projects of public utility. As of today, out of 22,259 tonnes of extra-ordinary collection of ELTs carried out in the two provinces, 13,775 tonnes have been collected with these modalities intervening in 50 different councils. As provided for by the Memorandum of Understanding, in addition to the collection activities, communication campaign and training projects on environment and legality have been promoted with the exceptional involvement of local schools. Over 1,000 students have so far participated in this project every year. Moreover, Ecopneus has promoted the realisation of sports infrastructures that have subsequently been donated to the local communities. An example is the football pitch dedicated to Antonio Landieri, a disabled boy who was an innocent victim of the Camorra in Scampia. Other examples are 11-a-side and 5-a-side football pitches installed in the Vanvitelli neighbourhood of the city of Caserta and the playgrounds donated to Caivano. The commitment of Ecopneus for the Terra dei Fuochi is constantly monitored by the Supervisory Committee of the Ministry of Ecological Transition and will continue while the available funds last.



### SCAMPIA IS BORN AGAIN THANKS TO RECYCLED RUBBER

77,000 kg of recycled rubber have been used to make the synthetic turf football pitch of the "Antonio Landieri" stadium in Scampia (NA), dedicated to a young and innocent victim of the camorra.

## The reduction of eco-fees

In compliance with the law, eco-fees are paid by consumers upon the purchasing of new tyres. Eco-fees are listed in a separate entry in an invoice that is subject to the application of VAT. Tyre producers and importers have to use eco-fees to cover all annual ELT management costs, both direct ones (collection, transportation, treatment, gate fee for the recovery of derived fuels); and indirect ones (monitoring of flows, administration, research and development, training and information). In other words, the capacity of a management system to finance its own annual activities depends on the correct and appropriate definition of the value of its eco-fees and from the earning of an amount of fees that is equal to the amount of spare parts placed on the market by the partner companies. This is an extremely delicate step that requires the maximum of transparency. In Ecopneus, the calculation process is managed bearing in mind a number of variables, as per MD 182. Examples are: the management costs contracted with the companies of the chain, the historical data of the efficiency of collection and recovery processes, the partners' sales forecasts, the risk evaluation of potential criticalities (even of geopolitical nature. An example of the latter may be the need of sending large amounts of derived fuels abroad), the planning of projects of both activities and communication, etc. Every year, the result of this process is a table that associates an eco-fee value to every tyre category sold by the partners of Ecopneus. These eco-fees are used for the recovery of the same categories. As provided for by the legislation in force, the table is to be accompanied by a detailed report that explains the evaluations that have been made. This table is then sent to the Ministry of Ecological Transition and, if there are no objections to it, it is published on the official website of the consortium. It is also communicated to its partners for its implementation and to all citizens for them to be aware of the information contained in it. From the beginning of its activities until today, the eco-fees applied by Ecopneus for the tyres that are most commonly sold by its partners has gone down by 27.3% as an average (weighed per category). Eco-fees have changed in time: they went down considerably in the first years of activity and then they fluctuated in the following years. This variation is due to the difficulties of being able to precisely define the trends of the partners' future sales of new tyres, especially in certain periods. Let us remember that this is the only source of revenues for Ecopneus. In certain years, whether it be for more earnings or lower costs, a greater disposable income has allowed to carry out tyre collections that were above the legal target. This has contributed to the prevention of environmental risks and has helped to achieve greater general safety.

### Trend of the Ecopneus management eco-fees from 2011 to 2020



## Focus on legislation: The Ministerial Directive on ELT extra-target management

Few months after the entering into force of the new regulation for ELT management, on 11th December 2020, the General Management for the Circular Economy of the Ministry of Ecological Transition intervened on the long-standing problem of the excess of ELTs generated compared with the amount of ELTs placed on the spare parts market. It highlighted the need of acting to try and solve a situation that was particularly serious at generation points (mainly tyre dealers).

This Directive is aimed at all management bodies that deal with an amount of tyres placed on the spare parts market higher than 200 t/year. In order for them to comply with their environmental obligations, the Directive states that these bodies are to take care of this problem by increasing their management target by 15% (up to a maximum of 20% if necessary) with reference to the obligations set out by the new ELT Regulation - the MD 182/19.

Moreover, the Directive specifies the possibility of re-calculating the eco-fees to face extra management costs. It also states that the reporting of the activities is to be carried out by indicating the amounts of ELTs collected from all generation points, the amounts of tyres placed on the spare parts market and the eco-fees earned for each month of the year.

The text of the Decree highlights how the causes of this problem are attributable to the persisting existence of illegal tyre import and sales activities on the national market.

**TRANSPARENCY,  
INFORMATION,  
TRAINING**



A constant commitment to communicate with its stakeholders has accompanied Ecopneus since the very beginning of its activities. An effort that has been made with precision, quality and correctness, and with the aim of achieving the maximum of transparency towards all Institutional Control Bodies. In the course of ten years, the activities and the objectives of Ecopneus have followed the evolution of both Ecopneus itself and of its relationship with its stakeholders. At the same time, Ecopneus has modified its objectives and communication strategies.



## STARTUP OF THE NATIONAL SYSTEM

The information about the start up of the activities of Ecopneus within the scope of the new national ELT management system and its functioning was at the centre of the first phase of the communication campaigns of Ecopneus, even before its effective startup in 2011. Main targets were, above all, the operators of the spare parts market, because they were the protagonists of the new system. Also the media that contributed to the spreading of the Ecopneus messages were first targeted.



## DEVELOPMENT OF THE MARKET OF RECYCLED RUBBER

The consolidation of the system and its functioning has subsequently allowed Ecopneus to focus on the promotion of the applications of recycled rubber. It has spread the results of its Research and Development activities and promoted the several sectors of application of recycled rubber, also by the means of demonstration exhibits. Main targets are the representatives of the end-users of the applications, the sports world, the PA, the academic world and the experts of the sector.



## TERRA DEI FUOCHI AND LEGALITY

The deep knowledge of the national management system helped by a constant dialogue with the stakeholders of the sector and the Institutions has opened an area of action and communication on the issues related to legality. This commitment has been expressed also with the extraordinary activities implemented within the scope of the Memorandum for the Terra dei Fuochi.



## THE ECOPNEUS SYSTEM IN THE NATIONAL SCENARIO

The work aimed at consolidating the network of the partner companies has intensified progressively. In the course of time, the collaboration with the partner companies of Ecopneus has been implemented with synergy actions even in the communication campaigns about the management and recycling chain of ELTs. At the same time, partnerships with the main players of the national circular economy have been developed, such as: research bodies, environmental associations, opinion leaders, as well as the representatives of the National Institutions and of the PA linked to the sector.

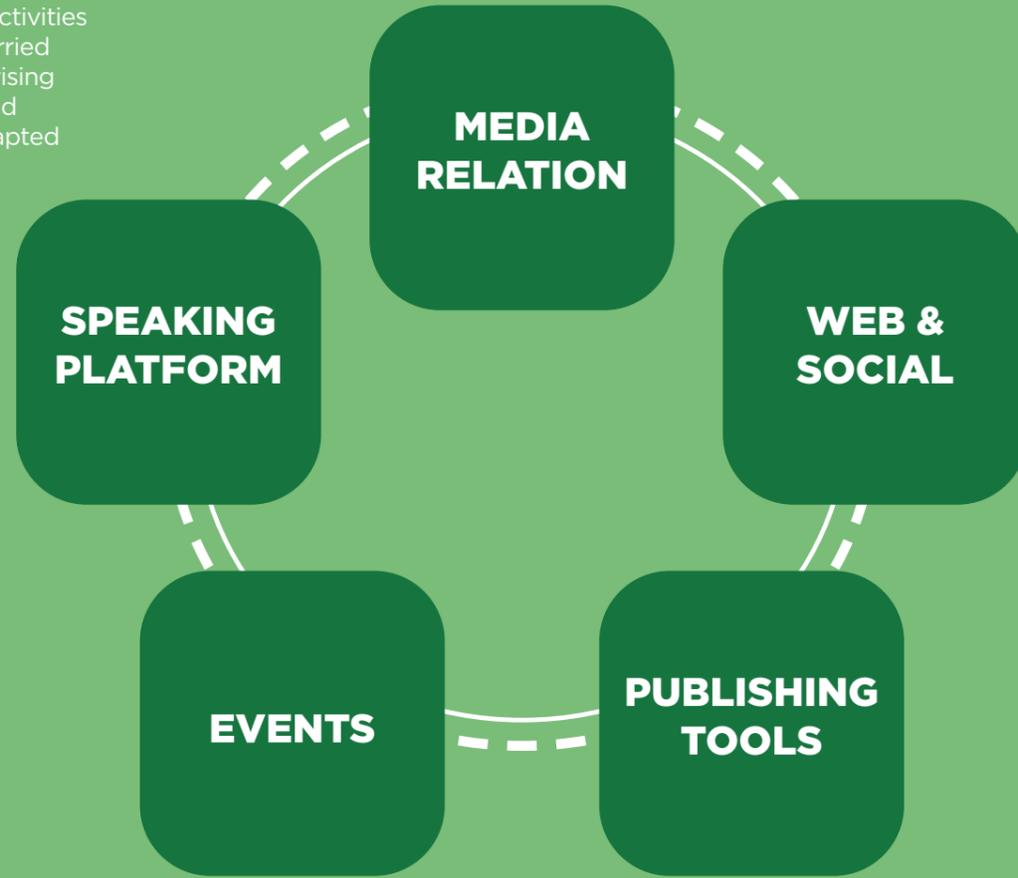


## LEGISLATIVE SCENARIO

Last but not least is the contribution of Ecopneus to the knowledge and the evolution of the legislative framework of reference for the sector. This is based on the European legislation on the circular economy and it is transversal and constant compared with the development of its activities.



In the course of time, the activities of Ecopneus have been carried out working with and valorising all communication tools and modalities. These were adapted according to the different messages and targets.



### ECOPNEUS AT THE SPORTS FESTIVAL

Since 2018, Ecopneus has been the Sustainability Partner of the Sports Festival, that is held in Trento during the month of October. Also thanks to the involvement of the former captain of the Italian National Basketball Team, Gek Galanda, over 100 boys and girls have been able to play on Tyrefield courts installed in collaboration with the basketball star every year. In 2020, the Festival was held in Digi-live mode due to the Covid-19 health emergency.



### 10 years of communication of Ecopneus through its main steps and projects

7 <sup>th</sup> september, activities start		Signing of the Protocol for the <b>Terra dei fuochi</b>		Million <sup>th</sup> tonne collected			Complete emptying of ELT stock of Castelletto di Branduzzo, Among the largest in Europe			
<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	
1 <sup>st</sup> Convention of the Ecopneus chain	1 <sup>st</sup> step <b>Open Plants</b>	Launch of the <b>ELT Academy</b>	Launch of the <b>Educational Project</b> in partnership with <b>Festambiente</b>	<b>Recycled rubber field at Fiera Cavalli</b>		Birth of the <b>Observatory on the Illegal flows</b> of tyres and ELTs in Italy	Launch of the <b>Clean Change Platform</b>	<b>Ecopneus Sustainability Partner</b> of the Sports festival of Trento	<b>Ecopneus Effect Report</b> on the development of the chain	Presentation of the Report of the <b>Observatory on illegal tyres to the Ministry of the Environment</b>
<b>Ecomondo convention</b> on the system start up	1 <sup>st</sup> <b>Sustainability Report</b>		Ecopneus - <b>Atalanta Bergamasca Calcio</b> Agreement			Ecopneus - <b>Bologna FC 1909</b> Agreement	Inauguration of the " <b>Antonio Landieri</b> " stadium in <b>Scampia</b>	Beginning of the collaboration with the <b>Veterinary Military centre of Grosseto</b>		<b>Framework Agreement with the 4 divisions of the Armed Forces</b>

# Special and Communication Projects

## THE CAMPAIGNS

The information campaigns promoted by Ecopneus highlight the various phases of its communication strategy implemented in the course of the years and that are partly still ongoing:

- Informing on the system, its operativity, and the environmental and financial benefits linked to it
- Promoting the many applications of recycled rubber
- Supporting a culture of legality, promoting virtuous forms of behaviour for both children and adults alike

The developed messages and visuals have accompanied many initiatives and projects in the course of the years, reaching all stakeholders through newspapers, magazines, social platforms and websites.



**2010 ADVERTISING**  
COME AND FIND OUT ABOUT THE NEW WAY OF END-OF-LIFE TYRES

**2013 ADVERTISING**  
THE RECYCLING OF ELTS: A PRECISION MECHANISM



Il riciclo dei Pneumatici Fuori Uso: un meccanismo di precisione



**2017 ADVERTISING**  
THE ECOPNEUS SYSTEM: THE GREATEST INVENTION AFTER THE WHEEL

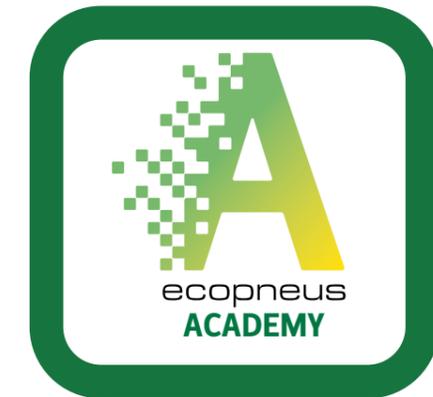
## TRAINING AND EDUCATIONAL PROJECTS

The ELT Academy represents the main initiative put into place by Ecopneus to stimulate the dialogue and the knowledge about the functioning of the national ELT management system with the Public Administration.

It is a format of workshops on the regulatory background of ELT management and the legislative and administrative aspects of the same with the contribution of experts of the sector. It has been developed in collaboration with Legambiente and the support of ISPRA and the Regional ARPAs.

Aimed at the technical figures of Control Bodies, the law-enforcement corps and the Public Administration, these workshops have seen more than 18 sessions, over 1,600 participants and thousands of technical materials distributed all over Italy since 2018. It is an important contribution to the widening of the networking activities in favour of a better implementation of the system and the spreading of accurate and qualified information.

Care and quality are the characteristics of the effort of Ecopneus in favour of the younger generations.



## ECOPNEUS ACADEMY

Launched at the beginning of 2021, The Ecopneus Academy encloses the many educational and training initiatives already started by Ecopneus as well as the new planned ones.



**2020|21 ADVERTISING**  
ISTITUTIONAL BODY  
A WORLD OF POSSIBILITIES IS BORN OUT OF END-OF-LIFE TYRES

## THE SPORTS AND FURNITURE INSTALLATIONS IN SCHOOLS FROM THE EDUCATIONAL PROJECT

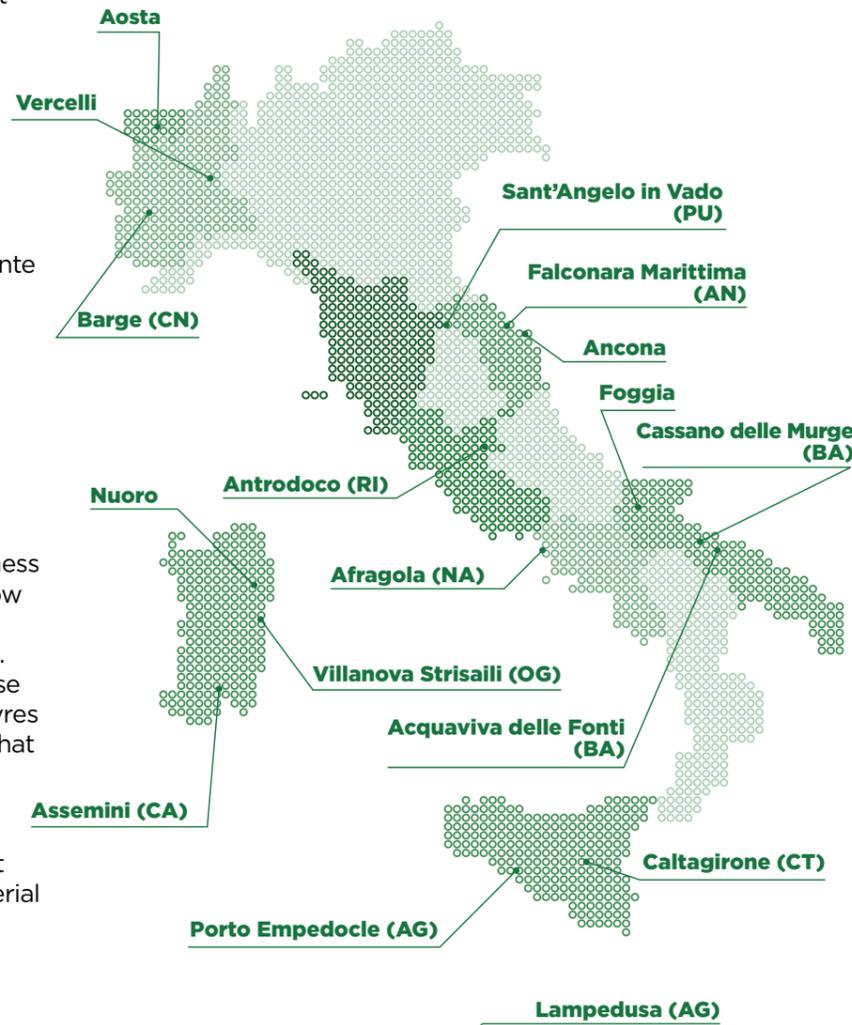
Since 2013, Ecopneus has collaborated with Legambiente on a training project aimed at the students of secondary schools. As of today, it has so far involved:

- over 10,000 students in 9 regions from the North to the South of the Peninsula
- 3,456 classes, over 4,000 teachers, 2,348 hours of frontal lessons in classrooms taught by 124 Legambiente educators.
- 9 sports surfaces donated to the schools of 9 Italian cities; 6 areas requalified with the use of furniture made with recycled rubber
- 6 shows about environmental education that have seen the participation of over 800 students.

This project aims at raising the awareness and helping the students to get to know and understand the benefits deriving from the correct management of ELTs. Each citizen can and must choose these benefits through legally buying new tyres and against their off-the-books sales that feed illegal dumping.

Every year they focus on a different Region. Students are met in their classrooms and visits to ELT treatment plants are organised; information material is distributed and events to better understand the issues of legality and sustainability as well as a contest are organised.

A jury composed of representatives of Legambiente, The Ministry of Education, the Ministry of Ecological Transition, and Ecopneus award sports surfaces and objects made in rubber to the schools of the winning classes every year. These prizes are a strong message of legality and environmental protection in those places where the new generations are formed.



## THE COMMITMENT OF ECOPNEUS FOR THE TERRA DEI FUOCHI AND LEGALITY

Since 2013, Ecopneus has acted within the scope of a Memorandum of Understanding signed with the Ministry of Ecological Transition, the Prefectures and the Councils of Naples and Caserta and the person in charge of the contrast of fires. It has financed the collection and management interventions of the end-of-life tyres abandoned in the territory of the Provinces of Naples and Caserta.

An extraordinary intervention to fight the phenomenon of toxic fires in collaboration with the involved Councils has been carried out by the means of the removal of the abandoned ELTs from the territory. Indeed, ELTs are often used as ignition and fuel for toxic fires. Ecopneus has also developed a project aimed at informing and educating about legality in order to fight the off-the-books sales of tyres that are linked to the illegal dumping of ELTs in the environment. Educational projects, public activities, contests open to citizens, initiatives with schools. All these activities are aimed at making culture and transforming the ELTs removed from the territory into concrete symbols of environmental protection and commitment. Meaningful examples are the recycled rubber synthetic turf football pitches of the Stadium of Scampia and of the Vanvitelli neighbourhood of Caserta, where children and teenagers train themselves to legality.

- 57 councils involved in the provinces of Naples and Caserta;
- Over 21,000 tonnes of ELTs collected
- 3 large historical stocks emptied: in Scisciano (NA), Naples "Gianturco", Villa Literno (CE);
- Over 1,000 students every year from 2013 to 2018. They have been involved in training and awareness-raising activities on "environment and legality" with a contest that has awarded the best works of the students with sports surfaces and recycled rubber furniture for the winning schools;
- Public initiatives and contests for the citizens that have led also to the creation of urban furniture and playgrounds in recycled rubber in several Councils;
- Creation of the 11-a-side football pitch dedicated to Antonio Landieri in the Scampia neighbourhood of Naples;
- Playground and multipurpose surface in the Parco Verde neighbourhood of Caivano, (NA);
- 2 sports surfaces in recycled rubber installed in the Vanvitelli neighbourhood of Caserta.

The operative activities of the Memorandum are supported by the communication campaign "I choose the right way". This campaign appeals against the off-the-books purchasing of tyres. Indeed, it is from this phenomenon that the flow of ELT dumping has started. These illegal ELTs are abandoned in the fields or on the side of the roads and are used to ignite the fires that sadly identify this territory.

The choice of matching the activities on the territory with an effort to inform and raise the awareness on these issues is linked to the objective of intervening with an immediate collection. It also aims at building long-lasting results that may help the younger generations to make responsible choices about legality for their future.



### I CHOOSE THE RIGHT WAY

The awareness-raising campaign that has supported the activities of the Protocol has launched a strong message about legality: you are needed to save your environment and your health. We need you. Do not buy off-the-books tyres; If you buy them off-the-books, you kill your land.

Since 2016, Ecopneus has promoted a roundtable - CambioPulito (Clean Change) – that aims at developing discussions and proposals on the issue of the illegal flows of tyres entering the national spare parts market. This is a phenomenon that is spread from the North to the South of Italy, with particularly impacting data. It seriously affects the correct management of ELTs, because tyres that are not accounted for in the national total are put on the market. As such, they are outside the collection quota attributed to the several collection bodies. Moreover, they do not supply the eco-fees necessary for financing their recovery. This initiative has seen the participation –not always enthusiastic- of the main interlocutors of the tyre and ELT chain in Italy. This is a network of over 50,000 companies.

“CambioPulito” was launched in May 2017, within the scope of the works of the Roundtable. Cambio Pulito is the first whistleblowing platform promoted by the private sector that had such a potentially wide participation. It was created to collect anonymous reports on malpractices or illegal behaviour among companies that generate unfair competition in the sector and the risk of ELT dumping.

At the end of 2019, the Observatory closed its activities of investigation of the phenomenon. Thanks to all the data collected in different ways, CambioPulito has well described the phenomenon of the illegal tyre and ELT flows in our Country, as it is summarised here-below:

30/40thousand tonnes of tyres are estimated to be illegally sold on the national market every year. To these, one must add:

- an estimated 12 million euros of unpaid eco-fees every year
- a yearly VAT evasion estimated at 80 million euros
- Environmental risk linked to the dumping of those ELTs deriving from illegal activities

The Cambio Pulito platform recorded 36 whistleblowing cases (from June 2017 to 15th December 2019) that involved 301 companies

The collected reports were processed by Legambiente through its lawyers of the Centri di Azione Giuridica (Ceag – Juridical Action Centres). They were almost all precise and detailed cases, equipped with supporting documentation and they were implemented in 8 reports sent to:

- Carabinieri for the protection of the environment. 136 companies were reported (126 Italian companies and 10 foreign ones) and 35% of the operators were subsequently subjected to checks and fines;
- The Italian Market and Competition Authority with the reporting of 14 websites (5 Italian and 9 foreign ones);
- The Aero-Naval Operations Department of the Guardia di Finanza of Naples, with the reporting of 24 cases in Campania alone.

About 80% of the reports concerned alleged infringements of the rules of trade, free competition and the labour market. Thanks to them, it was possible to focus also on the dynamics of the illegal sales from the part of many companies operating from abroad (B2C) and on the escalation of the thefts of new tyres for selling them on the black market (especially online).

## MEDIA RELATION AND SOCIAL MEDIA

Great attention and constant care are dedicated to the relationship with the media with the clear aim of offering correct and transparent information to the stakeholders involved.

With this in mind, Ecopneus has built a strong relationship with the press. Indeed, it is now considered an authority by all journalists, both specialised and not specialised ones. This has contributed to a greater knowledge of the system and the potentialities of recycled rubber. Its constant attention has effectively led Ecopneus to be recognised as a primary interlocutor on the topics linked to the management of ELTs and the applications of recycled rubber. Its commitment has generated over 5,600 presences on the media in the course of 10 years. Important TV appearances have derived from this role. They have accompanied Ecopneus during outreach or in-depth analysis programmes, as well as shows. The perimeter of corporate communication has progressively widened to include social media platforms: Facebook, Twitter and LinkedIn profiles have been created. Their scope is to reach and meet all the stakeholders of Ecopneus because social media are strategic places for dialoguing and the spreading of data and information, as well as for answering to questions and reacting to solicitations. This set up allows to meet the public of Ecopneus where they are already present spontaneously, giving specific information that is different for every platform and audience. This allows to give an answer to the various needs with coherent and specific information.

## PUBLISHING TOOLS AND WEBSITE

The website of Ecopneus, [www.ecopneus.it](http://www.ecopneus.it), has always been a source of detailed information on the activities of Ecopneus and the promotion of recycled rubber. It has evolved in the course of time keeping up with the evolution of the communication strategy of the consortium. Today it represents the concrete commitment of Ecopneus to transparency and reporting. It is an information portal that recorded the access of 67,288 users in 2020 alone. This means almost 10,000 sessions and 184,705 page visualisations: an average of 500 pages visualised every day.

At the beginning of the year, the user has easily and intuitively access to the details of the ELT management of Ecopneus, thanks to the finalisation of the information dashboard, maps, and interactive charts of the real management factors. As such, the user can consult the collection data all over the national territory and the state of advancement compared with the annual management and recovery targets that are updated on a monthly basis. A constant effort to transparency that advantages the spare parts operators, the companies of the sector, and the consumers.

## THE EVENTS

Through its participation in Trade Fairs and the promotion of events and educational workshops, Ecopneus has created occasions for meeting and discussing in the course of time. These have stimulated and fed the development of relationships and raised the awareness about its activities and, more in general, about the challenges posed by the circular economy in Italy.

Ecopneus is always open to dialogue during these meetings. This behaviour has led to its participation in trade fairs of the sector and to fairs linked to the promotion of the applications containing recycled rubber (Ecomondo, Autopromotech, Asphaltica, FieraCavalli). Not only fairs, but also initiatives aimed at presenting its annual report on its activities, such as the events organised in occasion of the publication of the annual Sustainability Report.

The creation of Stakeholder Forums deserves particular attention. In their first years of activity, Stakeholder Forums have been precious occasions for dialoguing with the national stakeholders of reference to reinforce the evolution and the constant improvement of the Ecopneus system.

In 2020, despite the restrictions imposed to limit the spreading of the pandemic, Ecopneus kept high its commitment for a direct dialogue with its audience. This was done by the means of a videoconferencing platform that was specifically designed. Also social media were used to promote the live streaming events of the consortium on specific topics.

## EVENTS IN PRESENCE



## ONLINE EVENTS

## INTERNAL COMMUNICATION

With this heading, it is meant to highlight the business line that has been developed by Ecopneus for the operators of the spare parts market since the starting of its system. Indeed, they are the main recipients of the work of Ecopneus. "Internal Communication" also means the activities put in place for the companies of the network of partners that carry out the activities of ELT collection and treatment on behalf of Ecopneus. These companies are chosen by the means of rigorous and transparent online selection procedures.

The Ecopneus Convention is a privileged tool dedicated to the people responsible for the partner companies and their technical figures. It is a periodic occasion for meeting in Rome. The city of Rome has been chosen as it is geographically central compared with the provenance of the participants.

In occasion of important steps for the system (start up of new contracts for ELT collection and treatment, legislative news), Ecopneus organises moments of internal alignment with regards to the scenario of the moment. Moreover, it offers training sessions and in-depth analysis activities, thanks to the involvement of internal experts and consultants. In May 2020, it was possible to carry on with this project in occasion of the publication of the MD 182 (April 2020) thanks to the dedicated online platform. The MD 182 has sensibly redefined some of the rules that govern the ELT national management system. This happened also following the publication of the MD 78/2020 (July 2020), that marked the opening of a new phase of the establishment of rubber as recycled material that can be used in many applications with uniformity of evaluations and authorisations all over the national territory.

On another front, the start up of the system was accompanied by the creation and the sending of basic informative material to a large part of tyre dealers. The objective of this project was to actively promote the participation of these subjects to the start up of the activities of the system. Indeed, it cannot but start from acquiring the full awareness of what this concretely represents for their activities. In the course of time, Ecopneus has enriched its communication activities with several initiatives and tools:

- Direct call center as well as as a toll-free number to support the capacity of Ecopneus to comply with the requests of information in the most intensive phase of the set up of the system;
- The creation of the Facebook profile for the monitoring of the requests coming from the operators of the sector. This communication channel with them is stable;
- The promotion of online events (Facebook Live events) to involve the operators with reference to the legislative news of the sector, that have particularly characterised 2020.
- Finally, Ecopneus has overseen several editions of Autopromotech, another important occasion of meeting and discussion with the operators of the spare parts market that is held every two years.

## AUTOPROMOTECH

It is the main occasion for meeting the over 25thousand tyre dealers served on the territory. During this trade fair, Ecopneus has promoted also the event "Ecopneus listens".

This is a space dedicated to tyre dealers and the operators of the spare parts market.

It can be used for asking for clarifications, information, and updates and for answering to all their questions.



## SPAZIO ECOPNEUS

Diretta Facebook



Mercoledì  
29 aprile 2020  
ore 11.30



## FACEBOOK LIVE EVENTS

During the months of lockdown in 2020, Ecopneus activated a direct channel with the operators of the spare parts market through some Facebook live events. These online meetings were organised to give an answer to their questions and offer them information on the operativity of the Ecopneus chain during the pandemic.

## CONVENTIONS

An important moment of communication with all the companies of the Ecopneus chain. In the course of the years, it has progressively expanded to the companies that use granules and powders. It is an occasion for discussing and sharing the results achieved and the medium-long term strategies.



## WEBINARS ONLINE

With the continuation of the health emergency, Ecopneus has exploited its dedicated online platform to organise webinars dedicated to specific topics: from horses' wellbeing made possible thanks to recycled rubber surfaces, to the role of recycled rubber in urban regeneration.



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