



# A SUCCESSFUL STORY

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**ecoTYRE**

L'Economia Circolare dei PFU





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# INTRODUCTION

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**Enrico Ambrogio**  
EcoTyre President

The year 2021 marks our first decade of activity in the ELTs (End-of-life Tyres) field. They were very dynamic years, characterised by continuous growth in both membership and volumes handled. Years of hard work with our collection targets and the Circular Economy always in mind, in a constant effort to strike the right balance between environmental and operational quality in terms of both the services provided and the environmental fee paid by consumers.

Our first years (2011-2013) were spent building up our national collection network. We had to organise at the operative level the activities of our various partners so as to allow them to locally respond to the increasing needs of tyre retailers, while paying special attention to reducing ELTs collection waiting-times. Activating a thorough and extensive collection network at the national level was essential, in an effort to also cover small tyre shops located in disadvantaged areas that were struggling to be reached by this type of service.

Efficiency and transparency is what we went for right from the start. To adequately deliver them we developed the EcoTyre Web Portal, an innovative and technologically advanced tool made freely made to our users that allowed us to fully digitalise all our paperwork and management tasks. Over the years, we remarkably handled in pure online form a total of 200,000 orders, 60,000 invoices and 70,000 environmental declarations submitted to the former Ministry for the Environment and the Protection of Land and Sea, now renamed Ministry for the Ecological Transition.

During our second phase (2014-2017), we focused on the quality of recycling, drawing upon the increasing lessons learned on how to improve environmental management, with the ultimate aim of maximising the recovery of materials. Thanks to everyone's hard work and commitment, we developed and consolidated a very extensive and thorough network of national and foreign partner plants, treatment plants included.

During the third phase (2018-2021), we aimed at the most ambitious objective of all in our sector: rather than just fulfilling waste collection legal requirements, we committed to making it possible to directly reuse ELT-derived rubber to manufacture new tyres. The Rubber to Rubber project was created in 2017 with this aim in mind and, in 2021, the project entered its 4.0 pre-industrialisation stage thanks to the authoritative academic and industrial partnerships that were established.

Through our collaborating with major environmental organisations, in the course of the years we carried out many informative and awareness-raising initiatives all over Italy, especially targeted at school children and young people. These initiatives often offered a concrete solution to tackle environmentally-challenging situations.

The present Report illustrates EcoTyre's evolution, the activities we implemented and both the results achieved so far and the ones we wish to achieve in the future. It was an intense and dynamic decade, marked by many challenges and successes. Please allow me to warmly thank our staff members and partners for contributing to making our innovative experience on the forefront of the Circular Economy possible.

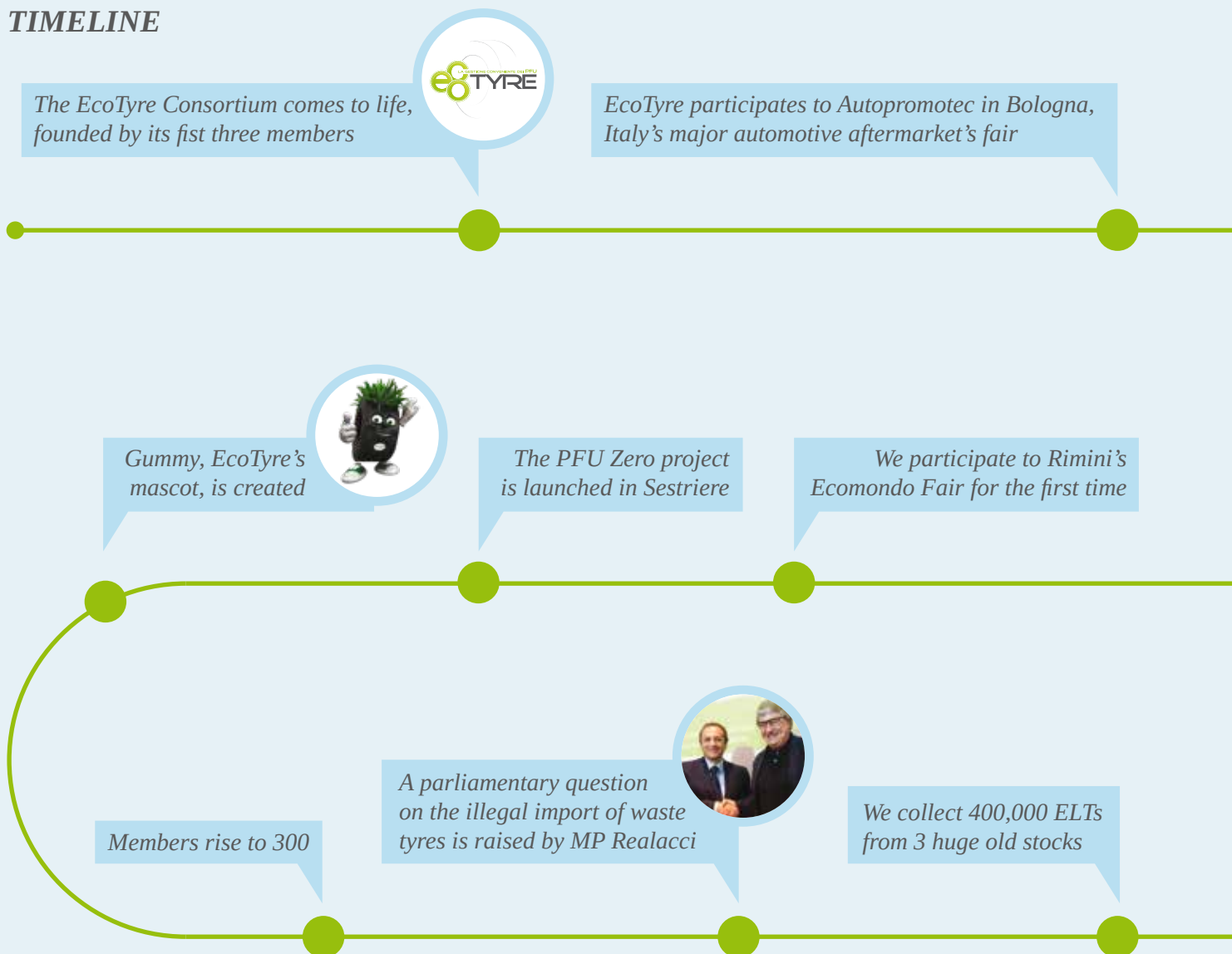
Please enjoy the Report.

# 2011-2013 THE FOUNDATION

**”** 2012 was unquestionably a paramount year for EcoTyre. We consolidated our operations and grew in size, becoming Italy's largest Consortium by membership in the sector **”**.

EcoTyre's first three years were dedicated to consolidating in a fast and effective manner our national collection network, with the ambition of achieving more than mere compliance with the provisions laid down by Ministerial Decree 82/2011 and provide a more ambitious yet sound and sustainable service. Our members immediately appreciated our operative and logistics choices and new members started joining us in increasing numbers. Moreover, during those years we also laid the ground at major institutional relations level, by participating to the Ecomondo Fair and joining the National Council for the Green Economy. The PFU Zero [ELTs Zero] project was also launched back then.

## TIMELINE



*Our first business year ends with a +10% collection rate vis-à-vis the pre-fixed target*

*Our web portal for ELT management is launched*

*Our collaboration with the Politecnico of Turin*

*We become members of the National Council for the Green Economy*

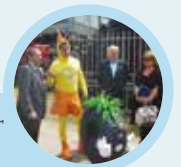


*We start collecting waste tyres at Italy's Automotive Club (ACI) car dismantlers*

*Our collaboration with Legambiente's initiative "Puliamo il Mondo" [Let's Clean Up the World] begins*



*The TV show "Striscia la Notizia" covers our special operations in Fiorenzuola d'Arda*

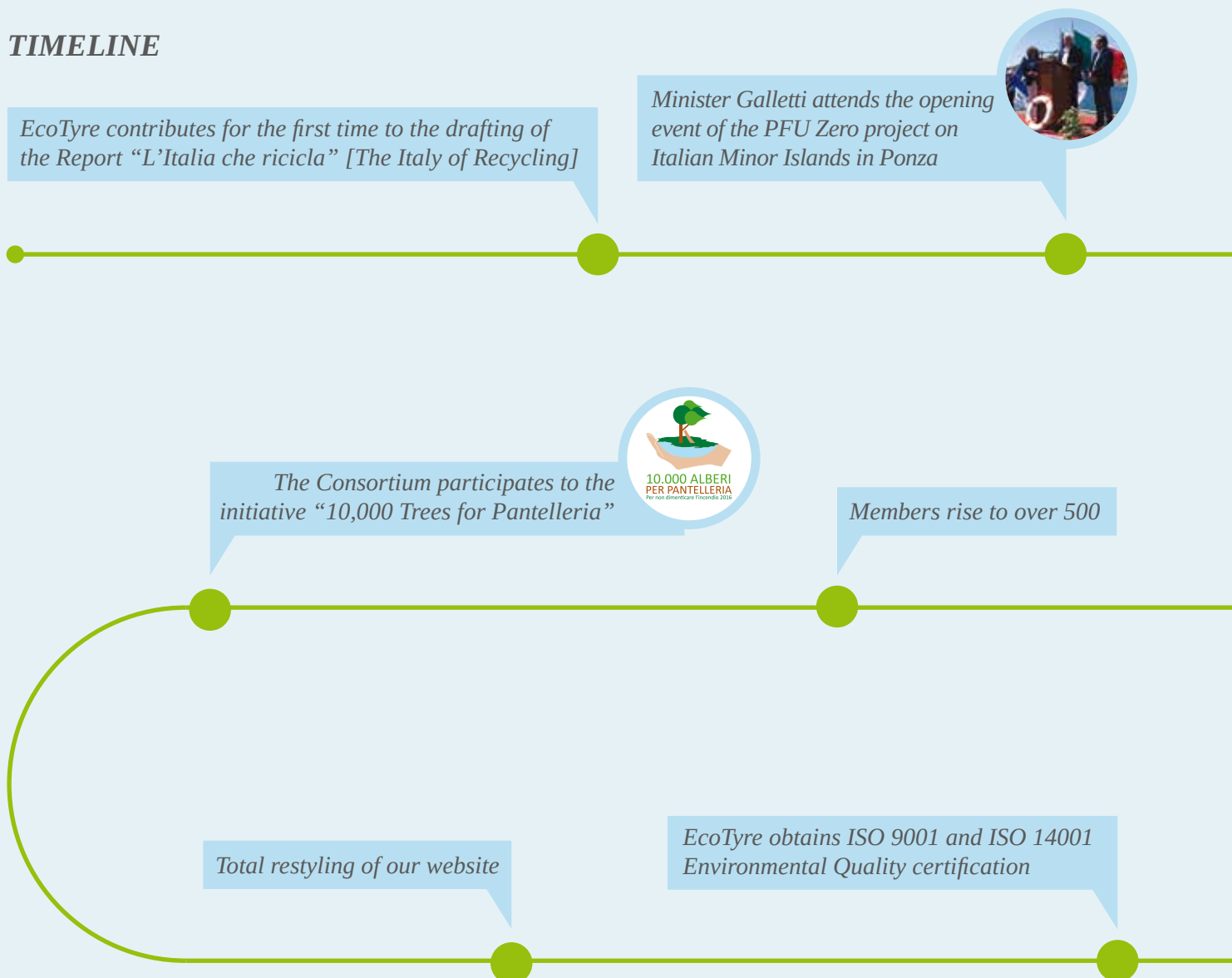


# 2014-2017 THE CONSOLIDATION

“ Now that the system is up and running and return flows have been stabilised, we see that our partner companies are growing, hiring new resources and investing. This proves that tyres can really set an example for the circular economy ”.

The Consortium's middle years were dedicated to deepening and reinforcing our recovery and recycling operations and expertise, building up a significant know-how in the field that allowed us to optimise our activities. We further implemented our PFU Zero project and consolidated our institutional relations. The then Minister for the Environment Gian Luca Galletti attended an event organised by EcoTyre and Marevivo on the island of Ponza. Our membership grew to 500 and our ELTs collection inflows kept increasing all over Italy. We continued innovating our infrastructure by modernising our IT data collection and reporting systems.

## TIMELINE





*Our collaboration with the Let's Clean Up Europe initiative moves its first steps*

*Undersecretary for the Environment Barbara Degani visits EcoTyre's trade booth at the Ecomondo Fair*



*Our operative portal enters its 2.0 stage, finalising the dematerialisation of our record keeping activities*

*Minister Galletti attends the opening event of the PFU Zero project on Italian Minor Islands in Ponza*



*The first 360°virtual reality video on ELTs is launched at the Ecomondo Fair*



*The Cambio Pulito [Clean Change] platform is created*

# 2018-2020 ON THE FOREFRONT OF THE CIRCULAR ECONOMY

” Ecotyre Live, a section of our website dedicated to communicating our R&D activities, is now up and running. Its contents are constantly updated and easy to consult and read, and also include the most relevant data on our operations and a real-time update on our degree of achievement vis-à-vis the relevant collection target ”.

From 2018 onwards, EcoTyre started collecting the fruits of its R&D efforts. Such efforts were taken on by the Consortium on an entirely voluntary basis through our “Rubber to Rubber” project, aimed at producing the first tyre containing devulcanised and recycled rubber. At the legislative level a number of changes were introduced, leading to the adoption of Decree 182/19 that redefined our sector. We consolidated our logistics network, which allowed us to cope with the pandemic crisis at best.

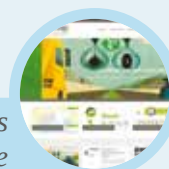
## TIMELINE

The first green tyre, containing recycled ELTs, is launched at Autopromotec



The PFU Zero project on Italian islands is extended to ports all along the Italian peninsula

For the first time in Italy, data on collections is made available on our website in real-time



Cambio Pulito publishes its first report on illegal waste trafficking



The Ministry issues the End of Waste Decree for ELTs

*Our first costumer satisfaction survey yields very encouraging results*

*Restyling del logo EcoTyre*



*We hit a total of over 50 million ELTs sent for recovery*

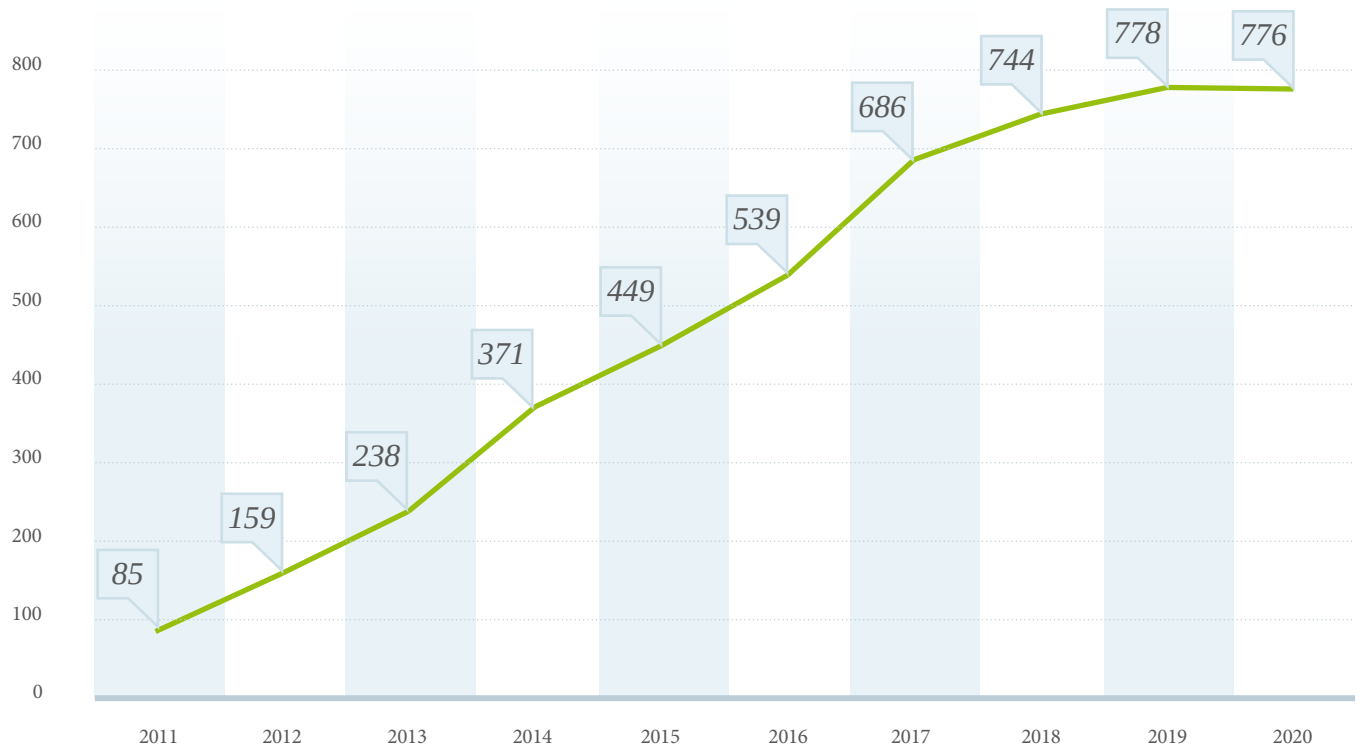
*750 Members treshold exceeded*

*Our collections punctuality index hits 90% and over*

*Ministerial Decree 192/2019 lays down a new regulatory framework for the waste tyres sector*



# MEMBERS 2011-2020



## 01 OUR MEMBERS-ONLY SERVICES

### ***Quality, digitalisation, affordability.***

The capacity to retain our members was always one of our greatest strengths. Back in 2011, the Consortium's founding members were joined by dozens more within a few months only. By the end of that first year, we hit 85 members in total. From then on, our membership kept rising, making us the country's leading player in the field by membership; a leadership position we still hold today.

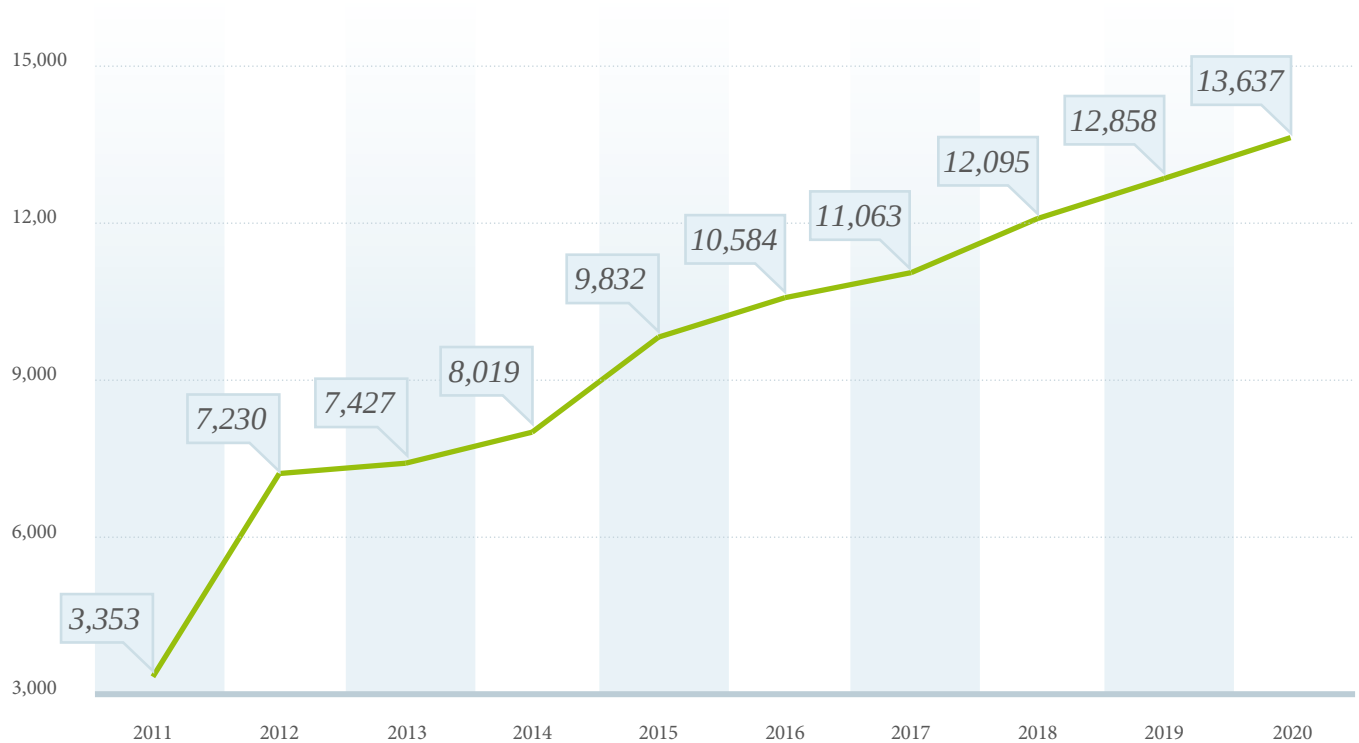
Our data collection and reporting system is based on an online portal purposely designed to respond to our members' needs at best. The latter can access the system remotely and easily input all relevant data on the amount of tyres they handled; these amounts will determine the applicable environmental fee to be paid for the end-of-life cycle of such tyres to be taken care of. Our invoicing system is also fully automated and was perfected in the course of the years so as to take all technical and regulatory updates into account as appropriate. These digital systems allowed us to eliminate paper records right from the start, saving us a great deal of time as much as raw materials.



In the course of the decade, EcoTyre kept working to optimise all stages of the process, so as to keep the cost of the environmental fee down. The latter depends on the costs incurred in total to manage all ELTs collected and includes all collection, transport, treatment and recovery costs plus the costs of the related paperwork and administrative tasks. By correctly balancing service quality and costs, the Consortium managed to cut the environmental fee paid by consumers by almost 28%.

On behalf of our members, in the course of time we also represented and advocated for their interests in the institutional arenas of relevance for our sector. In doing so, we always fostered the principle of free and fair competition while striving to speak with one voice when representing the needs of many and diverse sectoral stakeholders. We firmly believe that merely fulfilling existing legal requirements is not enough. The potential of the legislation in force should be fully unfolded and further innovated by way of high quality services capable of speeding up and anticipating the time-frames and decisions of lawmakers.

# INCREASE OF REGISTERED COLLECTION POINTS



## 02 ATTENTION TO TYRE RETAILERS

### ***Extensive coverage, punctuality and capacity to listen.***

Since the beginning, we wanted to be operative on the entire national territory and allow for tyre shops located in any Italian region to be able to subscribe as pick-up points. Their total number rose from roughly 3,000 in 2011 to almost 14,000 in 2020. From the remotest alpine villages to Italy's minor islands, EcoTyre guarantees an extensive service throughout the country, even covering for the higher logistics costs that collecting tyres in hard to reach areas entails.

Tyre retailers are provided with a platform where they can place their pick-up requests in a click and monitor them until the designated logistics partner arrives to collect the tyres. Our management software was optimised over the years to the benefit of our punctuality rate, which progressively rose to about 80% on average and more than 82% in the case of collections in urban centres.





Moreover, EcoTyre decided to prioritise the needs of small tyre retailers lacking ELTs storage space. Thus, even though collecting less than 300 waste tyres in a row is more demanding for us in both logistical and financial terms, more than 65% of our total collection missions falls into this category. Such a fair balance at service provision level between small and big retailers also benefits our members, who often act as suppliers of such undertakings. By ensuring an equally efficient service to all, we help strengthening their mutual trade relations.

**80%**  
**punctuality**  
**index**



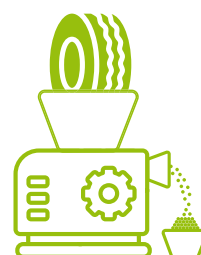
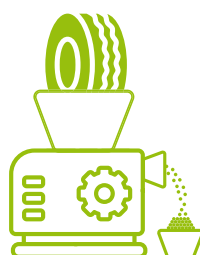
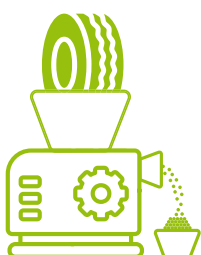
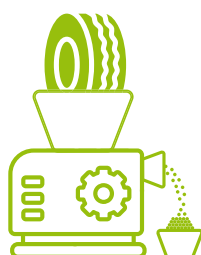
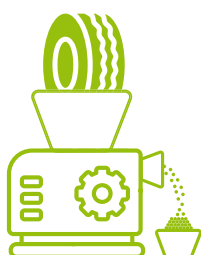
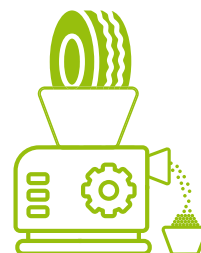
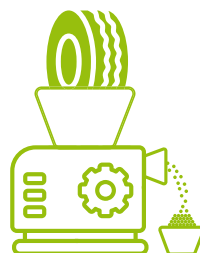
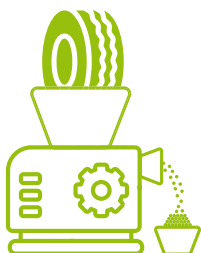
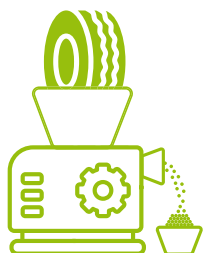
# 109

Logistics  
Partner



# 17

Recycling  
Partner



## 03

### COLLABORATION WITH OUR PARTNERS

#### ***Networking, common objectives, sustainability.***

If EcoTyre is such a sound experience it also thanks to the reliable network of partners and suppliers it managed to build in the course of its ten-year long existence. We decided right from the beginning to opt for a lean and light organisational structure in coordinating the work required to adequately send ELTs for recovery. This structure, which now counts ten either permanent or fixed-term employees in total, interacts on daily basis with our 109 Logistics Partners and 17 Recycling Partners.

Our Logistics Partners are all companies capable of responding in a prompt and timely manner to the pick-up requests placed by tyre shops and organise all relevant ELTs collection, transport and, if needed, stocking missions. Altogether, they represent a real and proper logistics network operative anywhere in the country and whose nodes were selected, trained and retained by EcoTyre over the years. A proactive selection dynamics is now also at play with our partners, on the basis of the principle of collaboration and in the name of sustainability.





On the other hand, EcoTyre entrusts the recovery of waste tyres to its Recycling Partners, companies working in the framework of the circular economy that have cutting-edge treatment plants for the recovery and valorisation of the secondary raw materials contained in waste tyres. Materials recovery having always been our main objective, we committed to selecting partners capable of delivering innovative recycling solutions.

EcoTyre's network also includes other stakeholders that do not strictly belong to the waste management sector but play a role in building the circular economy. One of them is the National Council for the Green Economy, a real and proper think-tank for green economy companies and for environmental organisations as Legambiente or Marevivo, with which the Consortium has been collaborating for years now. Other examples include universities and research institutions as much as artisans and recyclers' sectoral organisations.



## 04 *TARGET ACHIEVEMENT*

### ***Efficiency, effectiveness, good reporting.***

Hitting our annual collection target is not an easy endeavour. Seasonal trends and difficulties in accessing the locations where waste is produced influence the availability of ELTs. In light of this, EcoTyre has always adopted a National Collection Plan (NCP) which further develops the cumulative target set by the law. The plan is drawn on the basis of a thorough analysis of the various factors and of the time-series-derived seasonal patterns that impact the production and management of waste tyres. EcoTyre's monthly targets and the Consortium's national and local collection activities are then planned accordingly. Real-time reporting then allows us to readjust things and reschedule operations along the way as appropriate.





As a result of all this, for the past ten years we always managed to exceed the collection target set by the law, collecting between 2% and 10% waste tyres more than required. Such effectiveness is also reflected at the local level, with the Consortium achieving a collection surplus in all Italian regions. An approach that has also somehow anticipated the decision of the Ministry for the Ecological Transition to break down the national collection targets by geographical macro-areas.

In recent years, the NCP also pushed us to aim at total traceability and make real-time reporting via our website possible. Thanks to the website's EcoTyre Live section, stakeholders can now monitor our monthly collection trends, our regional flows and our target achievement degree. A fully transparent approach adopted in the name of our determination to always excel at our job and keep our promises.



## 05

## SOCIAL RESPONSIBILITY

### ***Ethics, values, awareness-raising.***

The Ministerial Decree of 2011 opened de facto the era of ELT management consortia in Italy; the decree established that, in the course of time, such consortia were also supposed to take care of the so-called “Old Stocks”, i.e. abandoned waste tyres dumps scattered in their hundreds all over the country. EcoTyre immediately started organising special operations to clean up these old stocks, using its own financial surplus to cover the cost.

As one of the main problems was locating such dumps, in 2013 we launched the PFU Zero project with the support of the Ministry for the Environment. The project was aimed at cooperating with the civil society, environmental organisations and local bodies in mapping these old stocks so as to facilitate their removal. It represented a genuine cultural leap forward, as the necessity to fulfil the land reclamation objective set forth by the law was accompanied by our own determination to raise awareness among the general public on how to correctly handle waste tyres. The project was immediately very well received and, over the past ten years, more than 200 clean up missions were carried out, eradicating millions of kilos of ELTs from the environment.

# THE PFU ZERO PROJECT



Through the “ELTs Zero on Italian Minor Islands and Shores” campaign, run in cooperation with Marevivo, and to the “Let’s Clean Up the World” initiative jointly carried out with Legambiente, the PFU Zero project became our main instrument to promote citizens engagement. This is because these missions run with the support of environmental volunteers are accompanied by educational moments, especially targeted at a younger audience, on how to correctly handle tyres when they reach their end of life. A formula that sees every year thousands of girls and boys attending such events all over Italy.

# 90%

euro 5/6  
vehicles



# 100%

recyclable  
matter



## 06

### RESPECTING THE ENVIRONMENT

#### ***Recycling, recovering, decarbonising.***

Managing the end of life cycle of a tyre means first and foremost enhancing the materials it contains. Tyres are made of rubber by roughly 70%, of steel by 20% and of textile fibres by the remaining 10%. In order to retrieve these materials, ELTs must undergo certain industrial processes that begin with the tyres being shredded so as to separate one component from the other. This part of the work is carried out on behalf of EcoTyre by our Recycling Partner, highly specialised companies operating throughout Italy to give waste tyres a new life.

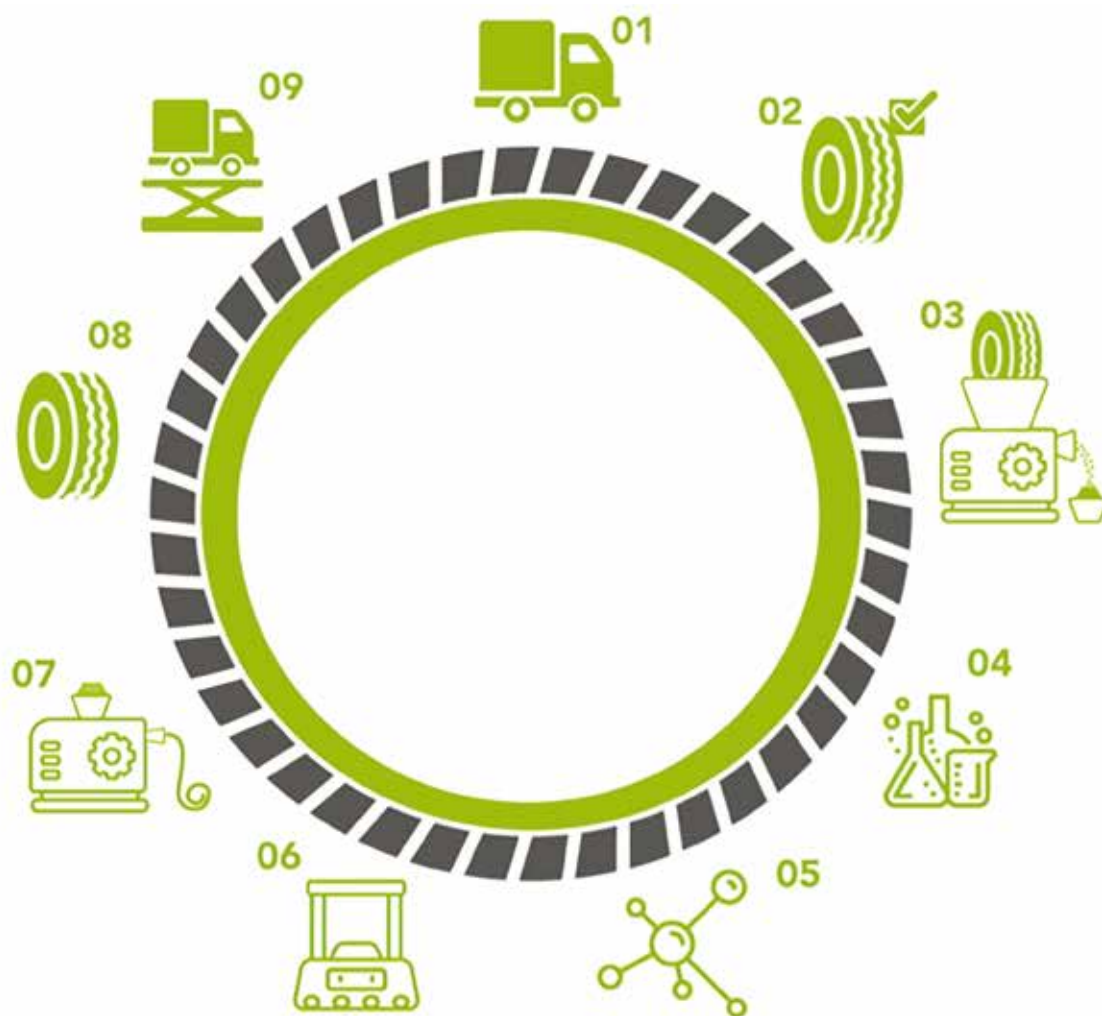
While steel and textile fibres can count on a consolidated recycle market by now, rubber has more limited applications and, for this reason, it is partly used as fuel for incinerators or cement factories to retrieve the energy it contains. However, it was always EcoTyre's policy to prioritise the recovery of the rubber material in the form of rubber powder or ELT granules to be used in products ranging from safety floors to sound-absorbing panels, urban furniture or modified asphalt.





In recent years, with the aim of facilitating this recycling efforts, EcoTyre developed the “Rubber to Rubber” project, that managed to reuse ELT-derived rubber granules to manufacture new tyres (see the following pages). Indeed, according to the estimates, in the case of ELTs the materials recovery option means producing 2 kilos of CO<sub>2</sub> equivalent less than the energy recovery one.

On the logistics side, thanks to our factual collaboration with our partners, the fleet transporting waste tyres on behalf of EcoTyre favours less polluting vehicles and, as of today, is made by more than 90% of Euro 5 or Euro 6 trucks.



## 07

### ON THE FOREFRONT OF THE CIRCULAR ECONOMY

#### **Research, development, circular economy.**

EcoTyre has always devoted part of its budget to R&D activities aimed at the most ambitious perspective of all for our sector: directly reusing ELT-derived rubber to make new tyres. An effort that goes beyond mere abidance to our legal obligations and has always made us very proud. In the first few years our research work, conducted in cooperation with major academic institutions, focused on how to use rubber and its elastic properties in special or anti-seismic concrete blends.

But the real turning-point was the creation of the Rubber to Rubber project, that saw EcoTyre bringing together a diversified team of researchers and sectoral practitioners to achieve a unique result: transforming the rubber of waste tyres into a raw material usable to manufacture new tyres. The team succeeded in doing so by subjecting the rubber to an unprecedented devulcanisation process and then using this recycled material to produce a binder that is fully equivalent to virgin-rubber-only ones.





The tyres produced with this green rubber were subjected to rigorous testing and showed comparable performance. An agreement with AGR and Versalis (Eni) then marked the beginning of the 4.0 stage of the project. Elastomers produced using ELT-derived rubber are now being developed for usage in various products, including tyres. An industrialisation process has thus finally begun and could open up an important new market for recycled rubber.



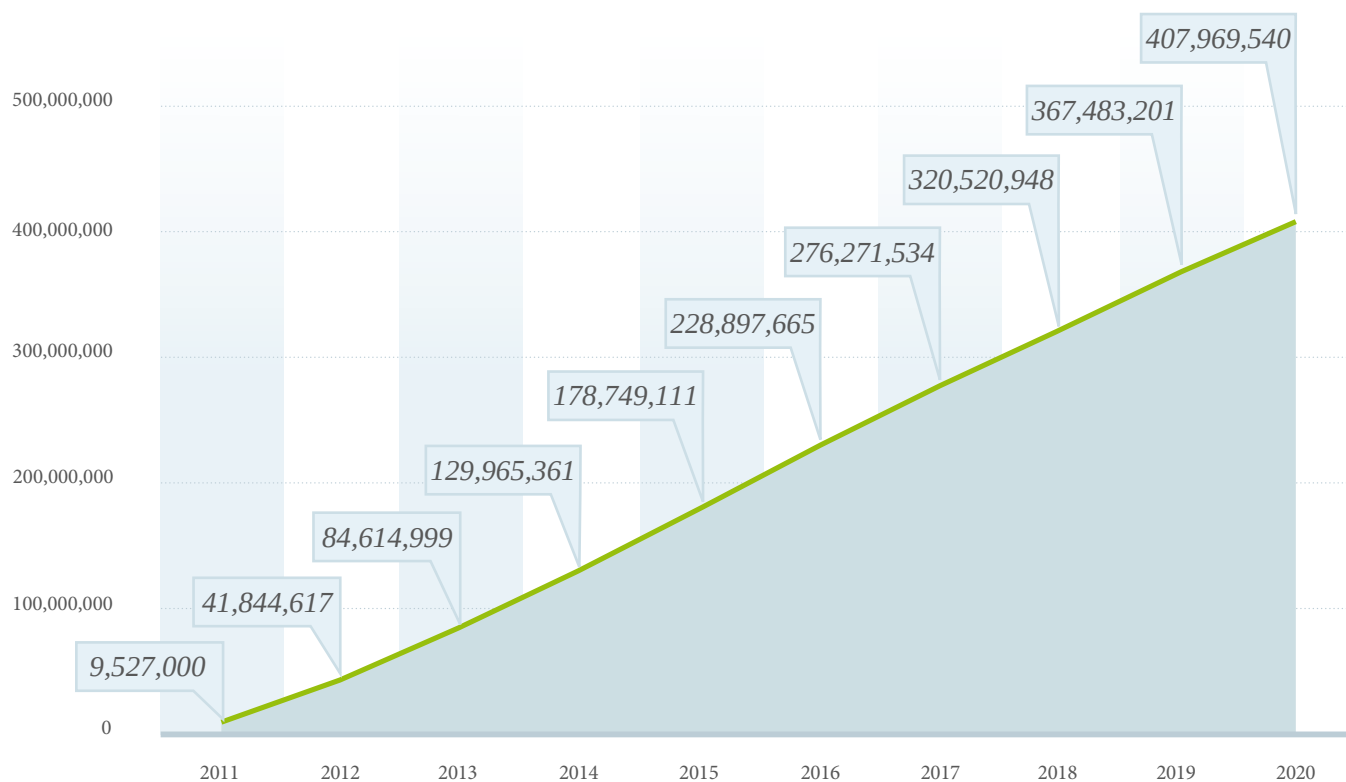
## 08

### *COLLECTION RESULTS*

EcoTyre's main aim is sending for recovery at least as many, if not more, ELTs as the number of new tyres its members place on the market. Our collection volumes in the past ten years thus mainly depended on two factors: trends in the tyre market on the one side, and EcoTyre's membership size on the other. Given the latter kept rising, the amounts of ELTs we handled increased accordingly. In the course of this decade our yearly collection total increased by four times, growing from 9 million kilos back in 2011 to approximately 40 million kilos an average during the past three years.

Altogether, more than 405 million kilos of waste tyres were sent for recovery as appropriate. Benchmarking this with the most common tyres, e.g. car tyres, it is the equivalent of more than 55 million items. So many that if you were to put them all in line you would cover the entire Earth's equator.

## CUMULATIVE COLLECTION 2011-2020 (KG)



To reach such an achievement, we carried out an equivalent of about 180 thousand collection missions at tyre retailers, car repair shops, vehicle dismantlers and abandoned tyres dumps. These missions were coordinated by EcoTyre, conducted by our reliable local partners and generated - according to our estimate - an economic value of roughly 100 million Euro in ten years. A value benefiting the areas where Ecotyre's partners work and generating a positive social and environmental outcome.

## CONTACTS

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