

# **Ecopneus and value creation**

## **Sustainability Report**

### **2012**



**ecopneus**  
il futuro dei pneumatici fuori uso, oggi



**Ecopneus  
and value  
creation  
Sustainability  
Report  
2012**

**Produced by:**

Ecopneus

**Scientific advice:**

Scuola Superiore Sant'Anna of Pisa

**Editorial coordination:**

Hill + Knowlton Strategies

**Graphic design:**

Peja Design

**3D Modelling:**

Unicity

1<sup>st</sup> edition: July 2013

**Creative directors:**

Peja Design

2<sup>nd</sup> edition: printed in August 2013

**Produced for:**

Ecopneus

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**[www.ecopneus.it](http://www.ecopneus.it)**

Printed in July 2013  
from Art Color Printing - Rome



ecopneus



Sustainable development  
is development that  
meets the needs of the  
present without  
compromising the ability of  
future generations to meet  
their own needs.

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that meets the needs of the present without  
compromising the ability of future generations  
to meet their own needs.

**BRUNDTLAND REPORT, UNITED NATIONS, 1987**



## Ecopneus and value creation Sustainability Report 2012

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## **Letter to Stakeholders**





Sustainability.

A concept so widely spread to become a cornerstone for companies to lead their strategies, their business choices, and their market and communication guidelines.

That is also valid for the tyre industry.

An important industry, articulate, multinational, highly technological, that for years has been moving towards the protection of end-user and environment's health.

The great efforts put by those companies operating in Italy and represented by Ecopneus, through its activity, reached high quality results in 2012, benefiting territory and citizens.

The efficiency shown by the system, the precise and effective compliance to the law, the commitment in research, practical development, and information, all represent an excellence Italy could be proud of.

Doing a good job and informing about it: it is with pride that we present the results of the first full year of activity. Results achieved thanks to the contribution of all the chain's participants and of those many persons involved in this ambitious project.

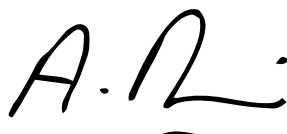
An activity continuously increasing its value through the "transformation" of products at the end of their lives into new materials and new products, new installations, able to be of real benefit to economy and society.

The recycling society sponsored by Europe is represented by our recovery chain, and it will be further strengthened by the increasing

acceptance that, in my opinion, these products obtained from ELT recovery will meet in Italy as well.

Ecopneus's good practice will certainly be a "must show" for our companies, like a flagship for our Country.\*

Andy Davies  
Past President Ecopneus

A handwritten signature in black ink, appearing to read 'A. Davies', with a stylized flourish at the end.

\* April 2012 – April 2013



One year of confirmations and moves forward, concrete results and new projects: that and much more is what 2012 represented for Ecopneus. This has been the first year of full activity with our commitment for ELT recovery all over the national territory - even in those areas where an intervention is a heavy burden and where economically our logic would suggest not to go - coordinating the job of tens of our partner companies working in the territory together with many small-medium sized entrepreneurial firms, at ELT generation points - tyre dealers, mechanic workshops, service stations - over 30.000 are those served by Ecopneus throughout Italy. All that with results that confirmed choices and orientations already started in 2011 and that have now fully demonstrated their effectiveness and efficacy in terms of our objectives. Objectives adhering first to the law, that inside the Producer Responsibility considers us responsible for the recovery of a material - ELT rubber - up to now hardly considered in our Country as a material with various and interesting possible uses. From modified asphalts to sport surfaces, to their soundproofing use, as anti-vibrating and quake proof devices, ELT rubber is affirming itself worldwide as a precious and widely used material: a reality still not widely developed in Italy, to support which we are strongly committed.

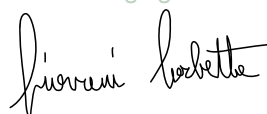
We have taken on our task with a long-term and far-looking perspective, beside sector companies, working hard for the market development of this material: a fundamental basis toward the Recycling Society model which represents a smart and sustainable solution to waste management and thus transforming their recovery into a resource. We are working to achieve all this through a path based on transparency, efficiency, cost-effectiveness that have been at the base of our activity since the very beginning, and that finds a fundamental step in the Sustainability Report.

A document that reports - clearly and exhaustively - all the complex activities developed to guarantee the collection, transportation, and delivery to recovery of over 240.000 tons in the course of the year, together with the promotion and support of important research and development projects, and socially relevant actions that took

us to collaborate with important personalities of the academic and research world, serving and supporting territory Institutions and Administrations. Reference is made here to collections from old stocks - four in 2012, but with a possible increase in the next years - that led to clearance of areas in various Italian regions from over 14.000 ELT tons illegally abandoned, for decades in some cases. Giving concrete messages that an effective waste management is possible can become the key and the message on which a new civil responsibility culture can be built in our Country to support legality, against illegal traffics and uncontrolled and criminal waste management, by means of adequate information and awareness. A global result of effectiveness and efficacy that stresses our constant commitment toward a responsible management first of all with respect to the resources paid by end users, through the environmental fee, for the implementation of the ELT national management system. The progressive fee reduction - that already started in 2012 and that we are willing to confirm in the coming years - is an important sign of such a responsibility and of the perspective we aim at with our daily job, that of a system finding the resources for its sustenance within itself, thanks to the development of new markets for ELT rubber and to the full development of an entire industrial sector. We believe that Italy has found in Ecopneus System a sound example of that Green Economy unanimously recognised as the key for a possible development in the hard times we are living in. A belief shared with many interlocutors and stakeholders with whom we intend to develop an ever deeper exchange, but that is above all the cornerstone on which we will continue to found our future commitment.

Giovanni Corbetta Ecopneus Managing Director

Giovanni Corbetta  
Ecopneus Managing Director





**Sustainability  
Report 2012  
in synthesis:  
Executive Summary**



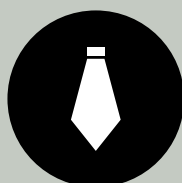
# Sustainability Report Second Edition

**2012**

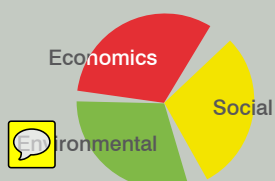
**Accounting reporting**  
Annually



**Reporting period**



**Standard used**  
Global Reporting Initiative 3.1



**Core performance indexes**  
Economics, social, environmental -  
either GRI or Ecopneus specific



**Reporting area**  
Company, with future goal to extend  
to the whole Ecopneus system  
the measurement of some impacts

# Sustainability Report 2012 in synthesis: Executive Summary

**ECOPNEUS IS A NON-PROFIT** Limited Consortium, for the traceability, collection, treatment and recovery of end-of-life tyres (ELT). The company began operations on September 7<sup>th</sup>, 2011, and today has 60 partner companies (among which are the six Founding Partners). Through tender procedures Ecopneus has selected the chain operators (17 main logistic contractor companies, their subcontractors, 25 shredding services suppliers, and material recovery companies that supplied their services in 2012).

**2012 REPRESENTED THE FIRST** full year of activity, with a first complete test on the activated system, not only in terms of law formal obligations, but also from a more operational point of view.

**WITH REFERENCE TO THE** Strategic field, Ecopneus represents a concrete expression of the **Green Economy** concept, in which a sustainable development is used as a driver in a precise and innovative entrepreneurial activity.

**HERE FOLLOWING, IN SYNTHESIS,** the main results and activities that characterised the year 2012, more widely explained in the next chapters of this document. ELT collection and recovery.



## ELT collection and recovery

**ELT COLLECTION - WIDESPREAD ALL** over the national territory - through over **78.000** missions, at over 30.108 registered ELT generation points (tyre dealers, mechanics, service stations), from which 100.805 collection requests were received, and that allowed 240.140 end-of-life tyres tons to be sent to recovery, so well overtaking the target set by law.

**ENERGY RECOVERY STILL REPRESENTS** the prevailing ELT use, while as far as material recovery is concerned Ecopneus dedicated a strong commitment, in particular toward uses in sport surfaces - market

240.140 ELT tons  
recovered at  
over 30.000 ELT GP.  
+6% vs. law target

absorbing the largest quantity of granules - and in road surfaces with modified asphalts containing ELT powder rubber.

**WITH REFERENCE TO SUCH** Promotion activities of material recovery, Ecopneus has consolidated some important partnerships (among which Politecnico of Turin, Bologna University, UISP - Unione Italiana Sport Per tutti), and has supported various projects, both in the road sector and in sport, strategic sectors for rubber recovery. Besides, it has started further activities toward the promotion and certification of quality ELT rubber products.

## Quality of the supply chain

**THE FIRST EVIDENCE HAS** been collected, showing how the global chain management has started some important processes of development and innovation inside the companies, in terms of qualification, efficiency, and environmental sustainability. A dynamic simplified in the Report through three in-depth analyses on as many operators of Ecopneus's chain.

**DURING 2012 TENDERS FOR** operators selection for the period 2013/14 were carried out. Tenders, that showed an increasing interest compared to the past (measurable by the number of "shows of interest" by companies), identified 72 winners, introducing a new

## A sustainable chain from an economic, environmental, social standpoint

service compared to the past edition ("transportation point-to-point"). According to the specific service needs, among the 30 assignees in the contest of the transportation point-to-point, on a time to time basis, the supplier best able to guarantee the service with the highest competence at the lowest costs will be chosen.



## Reduction of the environmental fee

**ALREADY DURING 2012 THE environmental fee** paid at the time of purchase of new tyres by end users decreased, thanks to relevant savings made possible by Ecopneus's management efficiency to consumers' benefit.

# Progressive environmental fee reduction to consumers' benefit

## Environmental and social benefit

**DURING 2012 ONLY FOUR** ELT collections from old stock were completed, which allowed to collect over 14.200 ELT tons, clearing four different sites from abandoned piles. Two of these interventions were made possible thanks to the management surplus of the previous year;



at least 30% of this surplus is to be dedicated to support collection costs from old stocks, otherwise a burden for Public Administration.

## Commitment and collaboration with institutions

**IN JUNE 2012** THE signature of the memorandum of understanding with the Customs Agency was officially made, regarding the “**End-of-life tyres cross-border movement**”, where a direct commitment by Ecopneus as a technical partner is defined, in monitoring flows linked to the international ELT trading.

# Transparency, information, awareness toward stakeholders

**DURING THE FIRST MONTHS** of 2013, in addition, the voluntary agreement for the definition of a specific system of measurement, reduction and neutralization of the Carbon Footprint of products made with ELT recycling and recovery derived rubber was signed with the Ministry for the Environment, Land and Sea. Already during 2012 some audits and surveys had been carried out with some suppliers, allowing to perform some analyses, such as, for example, the census of the type of vehicles used by partners in logistic, the km travelled for ELT collection and transportation, and their related consumption.

## Transparency and communication

**BEFORE STARTING THE OPERATIONAL** phase, **the activity** has been sustained by a **communication plan**, aimed at informing about Ecopneus's mission and activity, sensitize citizens and operators about the correct ELT management, and, at the same time, keep a strong transparency and *networking* activity with its reference *stakeholders*.



# Methodology and reading guide

**THE GOAL OF A** Sustainability Report is that of accountability for company's management, in this case of a particular company such as a limited consortium, by communicating and sharing with its *stakeholders* the *performances* and relevant impacts in terms of economic, social, and environmental sustainability. Differently from a normal balance sheet, this document covers a wider scope, by reporting aspects that are not only financial-economic, but that have an overall impact on the local and global community to which the organisation refers.

**IN PARTICULAR, THIS DOCUMENT** represents the second edition of Ecopneus's Sustainability Report, based on a yearly reporting (in this case the period January 1<sup>st</sup> - December 31<sup>st</sup>, 2012). It is necessary to remember that the Report 2011 was based only on four months of activities (from September 7<sup>th</sup> thru December 31<sup>st</sup>), thus being an introductory document to the reporting path, with the precise company target of assuming since the beginning a strong commitment toward *accountability* and transparency in terms of sustainability *performance*.

**THE PRESENT SUSTAINABILITY REPORT** supports Ecopneus's rich communication activity, trying to rigorously report impacts and performances obtained in the economic, social, and environmental field, in other words the company's global sustainability performance. From a methodology point of view, the reference standard is the **Global Reporting Initiative 3.1** ([www.globalreporting.org](http://www.globalreporting.org)), an international standard that defines the basic principles for a shared process across worldwide organisations, for a shared sustainability accounting base.

## Warranty principles of Balance quality - GRI 3.1

### Balance

The Report's content is impartial, reporting both positive results, and those for which substantial margins of future improvement are possible. Data analyses include a quantitative report of performance measurements, and a qualitative interpretation of reported information.

### Comparability

This aspect will have to be evaluated in the next editions of the document; as far as possible, in this second edition of the Balance Sheet, 2011 results vs. 2012 results have been compared, maintaining a coherence in methods used for calculations (besides an effort to improve the same reporting methodology).

### Accuracy

Information included in the Balance Sheet is accurate and as far as possible detailed. The quantitative error margin accepted is to be considered low. Besides, qualitative information is based on available and verified evidences.

### Timeliness

*Reporting* is made on a regular yearly basis, with the document publication within the following Summer of the reported year.

### Clarity

Information is presented in an understandable way for a wide audience, including non-experts. This year, to increase such clarity, an executive *summary* has been added, with the purpose of helping readers understand the Balance content, with an immediate synthesis.

### Balance Sheet

Information and processes adopted to make the report have been collected, registered, prepared, analysed, and communicated in such a way so as to be easily verified. The choice of having the document prepared by an external university institution instead of having it prepared internally, is in line with this objective of verifiability and accuracy of the contained information.

## Sustainability Report, an already started road.

**ANOTHER PRECISE CHALLENGE** **ECOPNEUS** has decided to face this year is the definition and selection of the priority topics on which this document is to be focused, so to guarantee an easy-to-read document and a solid consistency. By this latter term GRI means those topics having a direct or indirect impact on the organisation's ability to create, protect or affect the economic, environmental and social value of the same organisation, its stakeholders, and the society in a broader sense. In the future, a further step in priorities definition and thus of the consistency of Balance Sheet contents will be the mapping of relevance, of *stakeholders'* topics, with an involvement that will hopefully become bilateral and systematic in time.



## Document's structure

FROM A CONTENTS POINT of view, the document has the following structure:

- ▶ top management declarations (President and Managing Director), where Ecopneus's commitment and strategy toward sustainability are outlined, in the short and medium-long term;
- ▶ executive summary, outlining in a few pages core contents of measured performances in 2012;
- ▶ the included methodology note and reading guide;
- ▶ four central chapters:
  - Profile and strategy**, including a general contest to understand the organisation's performance, such as strategy, profile, governance;

A rigorous  
document, realised in  
collaboration with a  
qualified external partner

**Economic sustainability**, describing the economic performance obtained (information that can be otherwise obtained from the Civil Balance Sheet), a description of Ecopneus system (supply chain operators), and a focus on direct economic impacts on citizens (the so-called environmental fee);

**Environmental sustainability**, with an overview on environmental impacts deriving from the system's activity;

**Social sustainability**, with reference to impacts on local and global community deriving from the company's activity, together with a description of Ecopneus's human resources;

- ▶ a closing paragraph including future commitments, in light of a constant improvement, both in terms of impacts and in terms of their measurement methodology (*accountability*);
- ▶ a synthesis table with *performance* indicators used (GRI or Ecopneus specific and related to its activity);
- ▶ finally, to make reading easier, a paragraph containing a list of acronimouses used throughout the text.

## The collaboration with Sant'Anna School of Advanced Studies of Pisa

**FROM A METHODOLOGICAL AND** operational standpoint, the Report was prepared with the collaboration of the Management institute of Sant'Anna School of Advanced Studies of Pisa; a precise choice that allows Ecopneus to avoid auto referential processes, ensuring a scientific and rigorous approach to the issues of its final results and sustainability *performances*.

**THE IDENTIFICATION PHASE OF** relevant topics and of priorities definition has been directly followed by Ecopneus's Managing Director. Further steps of data collection, interviews of the main company's persons and a sample of suppliers, and finally the report draft took about one quarter of a year.







## **Profile and Strategy**





# Profile and Strategy

## Organisational Profile

**ECOPNEUS IS THE NON** profit **Limited Consortium** responsible for the traceability, collection, treatment and recovery of end-of-life tyres (ELT).

**FROM A LEGAL STANDPOINT** it is a non-profit limited consortium, operational since September 7<sup>th</sup>, 2011, accounting for 60 partner companies (among which 6 Founding Partners). By means of tender procedures, Ecopneus selected the supply chain operators (logistic, shredding, and recovery of material services were carried out by over 70 suppliers in 2012). The Company headquarters in Milan, and operates all over the country, with 12 employees in 2012.

**ECOPNEUS WAS ESTABLISHED BY** the main Italian tyre manufacturers, in line with the dispositions set forth by art. 228 of the Legislative Decree 152/2006 and the concept of the extended producer responsibility<sup>1</sup>. Six are the Founding Partners: Bridgestone, Continental, Goodyear Dunlop, Marangoni, Michelin, and Pirelli.

**Note 1** - The extended producer responsibility is a strategy designed to promote the integration into the price of a product of the environmental costs borne for its production and use, during its lifecycle. [OECD 2001; CE 98/2008; Lgs. D. 205/2010]

**Table 1** - Reference policy framework



### **Article 228 of the Legislative Decree no. 152 of April 3rd, 2006, the Environmental Code and the Extended Producer Responsibility**

Tyres producers and importers are obliged, individually or in associated form, and at least annually, to provide for processing a number of End-of-Life tyres equal to the number they market and intend for sale within the national territory. [extract]



### **Ministerial Decree no. 82 of April 11th, 2011, Regulation of End-of-Life Tyres management**

Decree enforcing Legislative Decree 152/06, including the schedule and operational procedures of the new management system.

## Ecopneus's mission and sustainability

THE COMPANY'S MISSION INCLUDES all the system's managerial aspects, expressing itself in particular:

- ▶ Identifying all waste-tyre generation points;
- ▶ Optimising the system's logistics, assuring the correct functioning of ELT transportation from tyre dealers to temporary storage centres and to final recovery plants;
- ▶ Assuring the collection process to feed all operators;
- ▶ Promoting new ELT uses;
- ▶ A constant monitoring, with a transparent reporting, to avoid illegal ELT dumping.

# Sustainable Development Prize 2012: Ecopneus among the 10 best Italian companies of Green Economy

ECOPNEUS'S CORE BUSINESS IS developed concretely and consistently along all three axes of sustainability:

- ▶ **Economically**, with efficient and effective business management, providing stimulus to an emerging market (that of the alternative use of ELT derived materials) to innovate on solid bases, producing satellite industries and positive effects on the local communities;
- ▶ **Environmentally**, with the efficient management of collection and recovery systems and the recovery of end-of-life tyres derived material, and an ongoing commitment to optimise the eco-efficiency of the chain;
- ▶ **Socially**, through the impetus to a culture of transparency and legality and the protection of public health and safety.

## Ecopneus's Strategy

**Note 2** - the only exception to be remembered is the reduction of the management target (80% of the previous year's immission), set for 2012 by the transitory Regulation included in the Ministerial Decree 82/2011, aimed at facilitating the start of the system at national level.

### Strategic Development Document

2012 CAN BE CONSIDERED the first fully operational year of Ecopneus system<sup>2</sup>, in which objectives and strategy found a concrete application in terms of functioning.

**By CONSOLIDATING ACTIVITIES**, a wider knowledge of its mechanisms, together with the execution of new tender to assign ELT recovery and processing services, it has been possible to put together a framework of information and knowledge of the Italian sector, at the basis of the **Document for Ecopneus's strategic development**, including the Guidelines for Management and Development.

**THE DOCUMENT** - approved by the Administrators in October 2012 - includes a development strategy proposal for the Company in the medium period, based on a complete and accurate picture of the reference sector, through objective and detailed data collected, which have clearly shown strength and weakness areas where Ecopneus can positively contribute to the whole development of the Italian ELT management sector.

**ABOVE ALL, THE MAIN** objectives which are at the basis of all Ecopneus's activity have been highlighted, in particular:

- ▶ The absolute formal and concrete respect, direct and indirect, of laws in force, regarding ELT management;
- ▶ Total management costs optimisation to support sustainability, free market, and ethics.

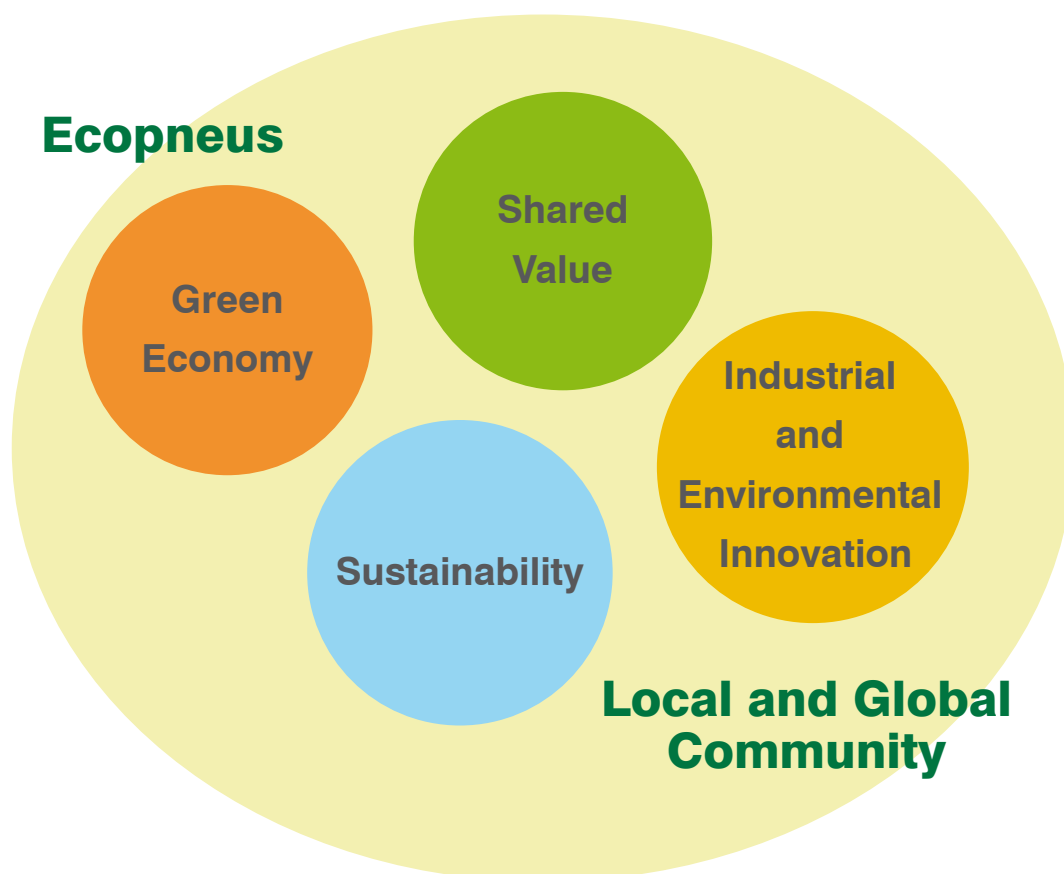
## Ecopneus, a sound example of Green Economy

**FROM A STRATEGIC STANDPOINT**, Ecopneus represents a solid expression of the *Green Economy* concept, in which a sustainable development is used as a *driver* of a precise new entrepreneurial activity. Concretely, this means the transformation of a potentially negative situation - such as a non-managed waste - into an environmental, social, and economic benefit.

**PRECISELY IN 2012 ECOPNEUS** received the Sustainable Development Prize - established by the Fondazione per lo Sviluppo Sostenibile (Sustainable Development Foundation) and Ecomondo, International Fair of Material and Energy Recovery and Sustainable Development - as one of the 10 best Italian companies of *Green Economy*.

**BESIDE THE GREEN ECONOMY** idea is that of shared value, a concept with deep roots in Italian industrial history (see Adriano Olivetti's commitment in this direction), where an innovative sustainability finds in the shared value between the company and the reference

community its entrepreneurial *raison d'être*. Ecopneus's attempt is to return value in terms of social and environmental sustainability (*shared value*), stimulating an industrial innovation and dynamism necessary also in the light of future generations' safeguard and development (*Green Economy*).



## Governance and stakeholders

**ECOPNEUS'S GOVERNANCE IS BASED** on a simple organisational structure, but with highly specialised functions.

**THE BOARD OF DIRECTORS** (BoD) of the Company consists of six members, CEOs of the Italian branches of the six founding companies. The current members are:

- ▶ Andy Davies - Bridgestone - President on December 31<sup>st</sup>, 2012;
- ▶ Alessandro De Martino - Continental;
- ▶ Luca Crepaccioli - Goodyear (President from April 23<sup>rd</sup>, 2013);
- ▶ Massimo De Alessandri - Marangoni;
- ▶ Jean Paul Caylar – Michelin;
- ▶ Daniele Deambrogio – Pirelli.

**RENEWED AT THE SHAREHOLDERS'** meeting in April 2012, the BoD will remain in charge for one year. The Directors may be re-elected, providing continuity to the defined strategies.

**THE CHAIRMAN OF THE** BoD - elected each year through a rotation system - represents the company's top management, supported by the General Manager, with a more executive role, which also acts as an employer under the Legislative Decree 81/2008.

**AT ECOPNEUS, A COMPANY** representing competing companies - and that does not distribute dividends - Directors have agreed not to involve themselves in detailed management, providing broad mandate to the General Manager, with activities that are strongly prescribed by waste regulations and strictly controlled by the Ministry of the Environment. There are also three control bodies for specific aspects: the Board of Auditors, the Auditing Company, and the Supervisory Committee.

## Returning value in terms of social and environmental sustainability

### Code of Ethics and the organisational model pursuant to Legislative Decree 231/01

**IN JANUARY 2012, THE** Company's **Code of Ethics** was finally approved. The official document contains all rules of behaviour, values and principles to which all directors, auditors, employees, consultants, and partners of Ecopneus must conform to in the conduct of their business.

**IN PARTICULAR, THE FOLLOWING** areas are outlined in the Code:

- ▶ **Relationships with company shareholders:** Ecopneus is committed to providing accurate, truthful and timely information to company shareholders, and within the scope of their prerogatives to improving the conditions under which they may participate in corporate decisions through the pursuit of their goals and with socially responsible management of the areas in which it operates;
- ▶ **Relations with the Institutions and Public Administration:** the assumption of obligations towards public administration and public institutions is restricted to assigned and authorized

corporate functions. In relationships with this type of partners, any entity that represents Ecopneus must exercise the utmost transparency, clarity, and fairness in order not to lead the institutions with which they have any sorts of relationships to partial, false, misleading or ambiguous interpretations;

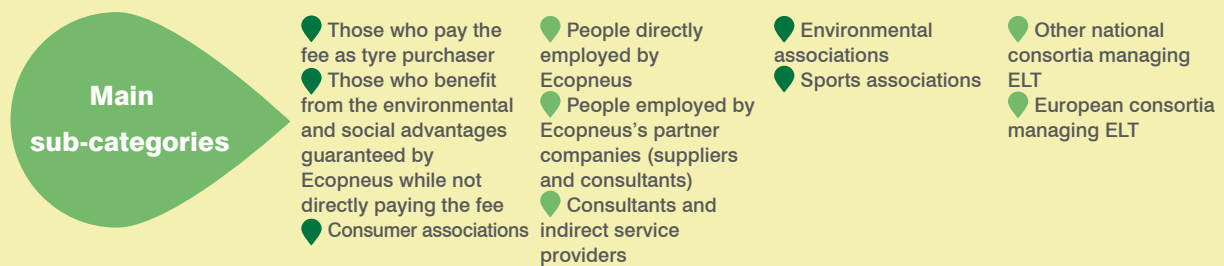
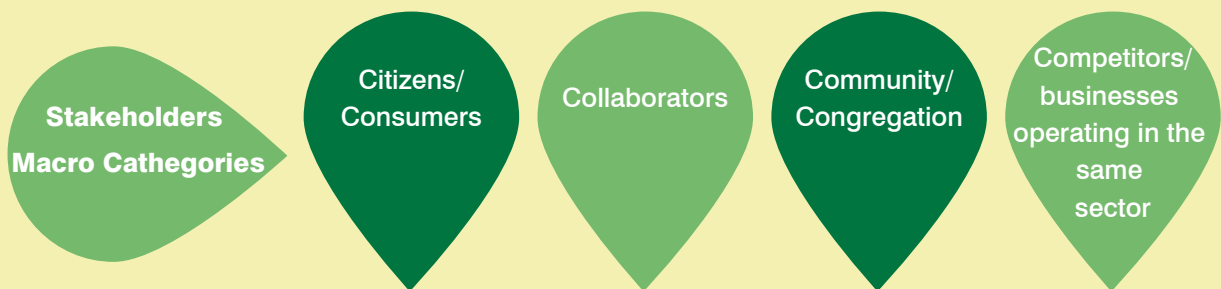
- ▶ **Relationships with suppliers:** Ecopneus seeks maximum competitive advantage in procuring goods and services, providing every supplier with equal partnership opportunities, as well as fairness and impartiality of judgment;
- ▶ **Relationships with employees:** management of human resources is based on respect of the personality and professionalism of employees. Professional development is valued, and any form of recommendation and cronyism condemned. People are to be protected in terms of equal opportunities and the absence of discrimination in the workplace is to be ensured.

**THE PRINCIPLES OF THE** Code of Ethics are made effective through the adoption of the **Model of organisation, management and control** adopted by the Company pursuant to the **Legislative Decree 231/2001**.

## Relationship with stakeholders

**WITH REFERENCE TO THE** Interest bearers, given the recent establishment of the Company, the correct methodology to be adopted in order to create a proper policy of stakeholder engagement and mapping is still being evaluated. Anyway during 2012 there has been a continuous and careful analysis and management of its relationship with those subjects influenced or influencing, directly or indirectly, the company's activities, as shown in the next page.





## Institutions, public administrations and regulatory agencies

- Ministry for the Environment, Land and Sea
- National institutions and authorities that interact with Ecopneus:
  - The House and Senate committees that evaluate measures that impact upon Ecopneus
  - Customs Agencies,
  - Financial Police,
  - Forest Service,
  - Ecological Operations Unit (N.O.E.) of the Carabinieri,
  - Other Ministries such as Industry, Agriculture, Transportation

Website  
[www.ecopneus.it](http://www.ecopneus.it);  
 webpage  
[impiantiaperti.ecopneus.it](http://impiantiaperti.ecopneus.it);  
 Dossier Copertone Selvaggio; Dossier on rubberized asphalts; Dossier on sport surfaces; Dossier on artificial turfs football fields; technical Dossier on surfaces in Asphalt Rubber; field's Fairs; international symposia

## Media

- National/local newspapers, Radio and TV
- National/international trade magazines
- Online media (websites, forums, blogs, etc.)

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## Academic world and scientific community

- Universities that collaborate in special research and projects (e.g. Scuola Superiore Sant'Anna, Polytechnic of Turin, etc.)
- Laboratories and testing centres
- Certification centres

Website  
[www.ecopneus.it](http://www.ecopneus.it);  
 Dossier Copertone Selvaggio; Dossier on rubberized asphalts; Dossier on sport surfaces; Dossier on artificial turfs football fields; technical Dossier on surfaces in Asphalt Rubber; field's Fairs; international symposia

## Supply chain operators

- Generation points (tyre dealers, service stations, garages, wreckers, etc.)
- Collection companies and their associations
- Shredders and their associations
- Energy recoverers (cement plants) and their associations
- Manufacturing companies and their associations
- Asphalt companies and their associations
- Companies that make football pitches and their associations
- Building and construction companies and their associations

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 Dossier Copertone Selvaggio; Dossier on rubberized asphalts; Dossier on sport surfaces; Dossier on artificial turfs football fields; technical Dossier on surfaces in Asphalt Rubber; field's Fairs

## Tyre manufacturers and importers

- Ecopneus partner companies
- Companies operating in the tyre production and import sectors that are not members of Ecopneus

Website  
[www.ecopneus.it](http://www.ecopneus.it);  
 internal  
 Communications;





## Economic Sustainability



# Economic Sustainability

## Value added determination and allocation

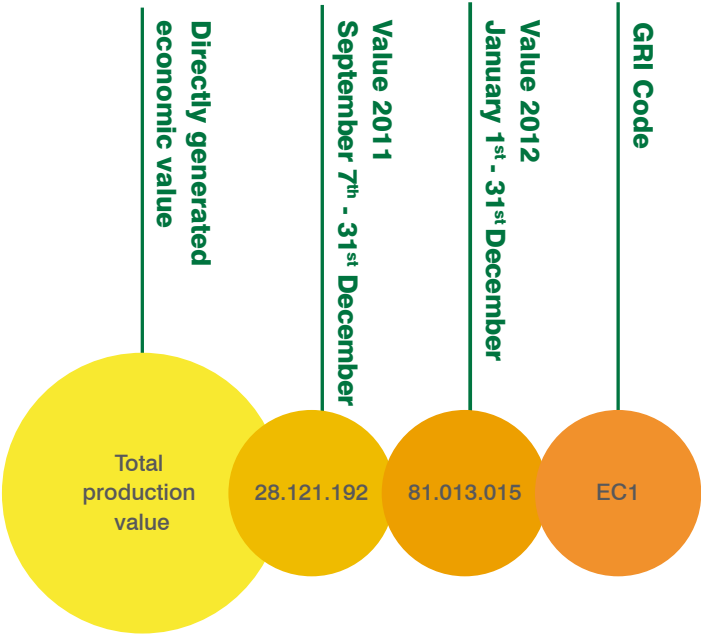
**THIS PARAGRAPH AIMS AT** illustrating the economic *performances* of the organisation during the year. It refers to an analysis of direct impacts, but with the precise aims of measuring also indirect generated impacts over time. Its ultimate goal is in fact that of illustrating Ecopneus's contribution to sustainability and added value creation of the economic system in which the organisation works, through the application of the *Green Economy* principles.

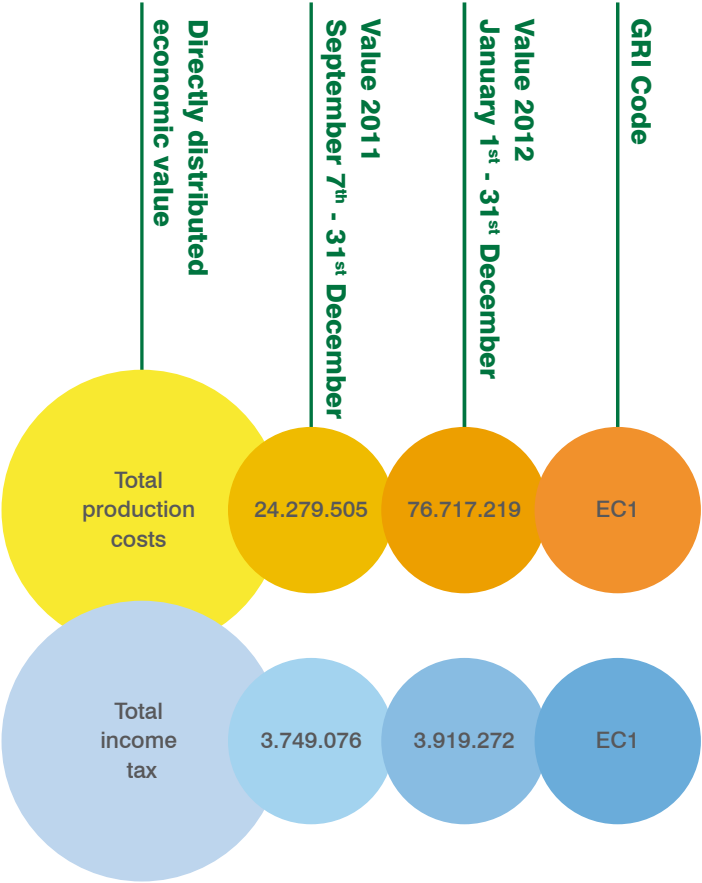
**BY RESTRICTING THIS BALANCE** sheet to the direct generated impacts<sup>3</sup>, a rough indication about the creation and distribution of economic value can derive from the total value of production (directly generated economic value), as well as from production costs and income tax (directly distributed economic value), thus providing an economic profile useful for a correct interpretation of other sustainability *performance* data.

**Note 3 -** for a first analysis of indirect generated impacts see page 72 paragraph "*Supply Chain sustainable management*", with a specific focus on three analysed business cases of Ecopneus's supply chain.

2012 data

ALTHOUGH IT IS NOT possible to compare 2011 data (only 4 months of activity) with those of 2012, for transparency purpose also data from previous year are reported.





**NET PROFIT 2012 AMOUNTS** to € 2.652.826. No financing from Public Administration is reported (core indicator GRI EC4).

## Supply chain's operators

### Companies value in the territory

**ECOPNEUS DOES NOT CARRY** out directly collection, transportation, treatment, and recovery operations that form end-of-life tyres chain's fundamental steps; it has decided to avail itself of companies already

#### Operators in Italy



in the field, thus favouring a logic of collaboration and support of their development, instead of competing with them.

### Online tenders with external operator's support

**SELECTION METHODS OF CHAIN'S** operators are made through tenders procedures allowing to assign different services every two years.

**TENDERS ARE CARRIED OUT** online and their management is under the responsibility of an independent institution, so to guarantee the necessary requirements of treatment equality, non-discrimination, and transparency. The first tenders were carried out in 2011, while during 2012 Ecopneus started procedures to identify chain operators for the two-year period 2013/14. Compared to the previous edition, 2012 tenders present a further service area, by splitting transportation into "collection, grouping, selection" and "transportation point-to-point".

## Selection of the best operators in terms of technical and authorisation process

**FOR THOSE COMPANIES INTERESTED** in being selected as Ecopneus's suppliers, the first step is represented by the "expression of interest" addressed to the Suppliers' register. Those showing the possession of the necessary prerequisites are invited to take part in the tender's procedures, when they will have to make their economic offer and provide the required documentation.

**AT THE END OF** the presentation of the economic offers, these will be analysed, and after a possible further negotiation step, tenders will be awarded.

### Suppliers 2013/2014

**TO SELECT THE TWO-YEAR** period 2013/14 Suppliers, Ecopneus has once again followed as a guideline the "priority criteria" already used in the previous experience, set in such a way to guarantee the selection of operators representing the best solution in terms of technical and authorisation profile.

**IN PARTICULAR, SUCH CRITERIA** evaluate the capability to guarantee the agreed result, taking into account previous business performances and measuring them in terms of previously treated quantities and of reference base (in case of collection), or previously stipulated contracts (in case of shredding), but also potential future development, for which financial and managerial capabilities, besides numbers of vehicles and plans, are relevant. Another important evaluation standard is the economic competitiveness of the offer made.

**ADDITIONAL EVALUATIONS ARE CARRIED** out based on the kind of authorisation or registration obtained by the company in the Supplier register, with the possibility to assign a “plus” to the offer presented. Differently from the previous selection, when Ecopneus had to make reference to the business structure as it was before the enactment of the extended producer responsibility principle, during the second selection a higher maturity and more choice possibilities emerged. It is indicative, for example, that among shredding suppliers only suppliers with an “ordinary” authorisation had been selected, while 5 out of 28 previously selected companies had only a “simplified” authorisation, that limited the possibility for shredding products to abandon the qualification of waste.

**AT THE END OF** the selection process, were selected 72 suppliers so distributed:

- ▶ 17 companies for “collection and storage” service
- ▶ 25 companies for “shredding” service
- ▶ 30 companies for “transportation” service

**TENDERS FOR ENERGY RECOVERY**, for the next two-year period, will be announced during 2013.

### **Ecopneus strategic partner for companies in the sector.**

**THE NUMBER OF “EXPRESSIONS** of interest” (which can be represented by the number of companies registered in the “vendor management” with a visible profile, i.e. number of companies who have successfully registered to the suppliers register providing all required information) eloquently shows the level of attention generated by the tender announced by Ecopneus, significantly increased during 2012 compared to the past edition.

**WITH REFERENCE TO THE** number of assignees, the differences between the two tenders can be explained by a different number of winners of the transportation service.



In the two-year period 2013/14 the “transportation” area of interest has been introduced beside that of “recovery and storage”, dividing in two services the transportation phase (collection at generation points and transportation from collection centres/storage to transformation plants). All that will allow the identification, according to specific service needs, of the supplier able to guarantee, from time to time, the implementation with the highest competence at lower costs; it will be chosen among the 30 assignees in the transportation field.

#### Assurance and regularity in suppliers’ payment

Payments timeliness and regularity are key in Ecopneus’s relationship with its suppliers. Although being an owed business practice, in reality it represents a new process for the sector and a very important contribution to its stabilisation and reinforcement, against a past made of instability and uncertainties which prevented a future increase and development.

## Environmental fee and end users: transparency and efficiency

**ENVIRONMENTAL FEES SET FORTH** by art. 5 of the Leg. Decree 82/2011 form the company revenue, paid off by associated companies on the number of tyres introduced in the market. A “company revenue” which represents the necessary funds, as set forth by the law, for an efficient and effective ELT system management.

**ANY SURPLUS IS AUTOMATICALLY** transferred to operations in the following year, with at least 30% allocated to withdrawals from historic ELT stocks all over the domestic territory, with the precise goal of the removal of historical pilings throughout Italy.

**THIS FEE IS DEFINED** yearly, and is paid at the time of purchase of new tyres, by end users. The environmental fee has to be shown in all tax documents for tyre sales<sup>4</sup>, to allow end users to clearly trace the financing of end-of-life tyres’ system.

**Note 4** - A particular regulation is foreseen for tyres deriving from end-of-life vehicles wrecking, that can involve tyre manufacturers/importers “in alternative to other authorised subjects to guarantee higher economic competitiveness”, by means of agreements with the Management Committee for ELT derived from end-of-life vehicles, established at Automobile Club Italia (ACI) as far as ELT collection and recovery, and their related costs, are concerned. Funds for this operation come from a specific fee collected by car dealers at the time of each new car sale, and then deposited in a fund established c/o ACI. The competent Authority is committed to the fee’s determination, on indications by the ELT Management Committee, with further responsibilities the fund’s management surveillance.

### Environmental fee decreasing

**IN THE TABLE THAT** follows the values of the environmental fee are shown (to which VAT must be added), calculated as Euro/tyre, from September 2011 to December 2012.

**AS CAN BE SEEN**, already during this first year and a half of Ecopneus system activity, the environmental fee paid by end users at the time of purchase of new tyres is decreasing, thanks to relevant margins made possible by an optimised efficiency to end users’ advantage.

Cat	User vehicles (examples)	Min-max weights (in kilograms)	Environmental fee (€/tyre)		
			Sep 7 <sup>th</sup> - Dec 31 <sup>st</sup> 2011	Jan 1 <sup>st</sup> - Apr 30 <sup>th</sup> 2012	May 1 <sup>st</sup> - Dec 31 <sup>st</sup> 2012
A	Mopeds and motorvehicles (mopeds, motorcycles, threewheelers etc.)	A1 (2-8)	1,50	1,40	1,40
B	Motor cars and trailers (cars, cars for private and business purposes, camping-cars, etc.)	B1 (6-18)	3,00	2,80	2,80
C	Lorries, buses (lorries' trailers, articulated lorry, trolley, road tractors, etc.)	C1 (20-40)	12,10	11,80	11,80
		C2 (41-70)	23,50	23,10	23,10
D	Agricultural machines, operational machines, industrial machines (tractors, excavators, etc.)	D0 (<4)	0,90	0,85	0,85
		D1 (4-20)	4,00	3,95	3,95
		D2 (21-40)	9,80	9,50	9,50
		D3 (41-70)	18,80	18,30	18,30
		D4 (71-110)	29,00	28,40	28,40
		D5 (111-190)	55,00	56,60	56,60
		D6 (191-300)	120,00	117,80	98,00
		D7 (oltre 300)	326,00	-	-
		D7 (301-450)	-	204,50	173,00
		D8 (451-700)	-	337,10	229,00
		D9 (oltre 700)	-	434,10	434,10



## **Environmental Sustainability**





# Environmental Sustainability

## Management results

**IN ITALY THERE ARE** over 35.000 ELT generation points, of which about 30.000, today, are registered in Ecopneus's website. Ecopneus system guarantees a detailed collection all over the country, with a timely and efficient service also in those areas difficult to be reached.

**THE PROVINCIAL COLLECTION DISTRIBUTION**, shown in the table below, provides a representation of how detailed is the service, guaranteed by Ecopneus thanks to the network of 17 suppliers (in the area of collection and storage) and their *subcontractors*.

## ELT tons collected by province

### Valle d'Aosta 95

AO - Valle d'Aosta/Vallée d'Aoste - 95

### Piemonte 13.072

AL - Alessandria - 3.310

AT - Asti - 951

BI - Biella - 255

CN - Cuneo - 2.515

NO - Novara - 1.313

TO - Torino - 3.691

VB - Verbano-Cusio-Ossola - 685

VC - Vercelli - 352

### Liguria 6.084

GE - Genova - 3.210

SV - Savona - 767

SP - La Spezia - 1.112

IM - Imperia - 995

### Lombardia 23.457

BG - Bergamo - 2.126

BS - Brescia - 2.825

CO - Como - 836

CR - Cremona - 1.413

LC - Lecco - 935

LO - Lodi - 951

MB - Monza e della Brianza - 1.517

MI - Milano - 7.158

MN - Mantova - 913

PV - Pavia - 1.445

SO - Sondrio - 803

VA - Varese - 2.535

### Trentino Alto Adige 9.610

BZ - Bolzano/Bozen - 3.001

TN - Trento - 6.609

### Veneto 17.996

BL - Belluno - 855

PD - Padova - 2.919

RO - Rovigo - 947

TV - Treviso - 3.330

VE - Venezia - 2.493

VI - Vicenza - 3.372

VR - Verona - 4.080

Key ► 100 t

### Friuli Venezia Giulia 3.710

GO - Gorizia - 523

PN - Pordenone - 732

TS - Trieste - 725

UD - Udine - 1.730

### Emilia Romagna 23.167

BO - Bologna - 3.424

FC - Forlì-Cesena - 1.256

FE - Ferrara - 7.330 5

MO - Modena - 3.014

PC - Piacenza - 1.574

PR - Parma - 2.237

RA - Ravenna - 974

RE - Reggio nell'Emilia - 2.290

RN - Rimini - 1.068

### Toscana 15.023

AR - Arezzo - 1.183

FI - Firenze - 4.062

GR - Grosseto - 1.571

LI - Livorno - 1.299

LU - Lucca - 1.410

MS - Massa-Carrara - 1.110

PI - Pisa - 1.185

PO - Prato - 836

PT - Pistoia - 1.276

SI - Siena - 1.091

### Marche 6.927

AN - Ancona - 1.902

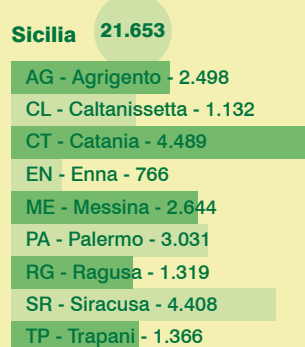
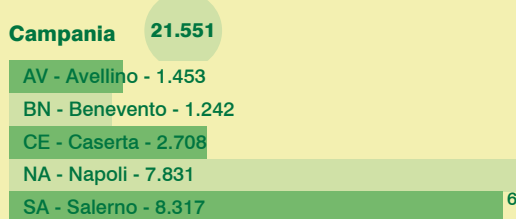
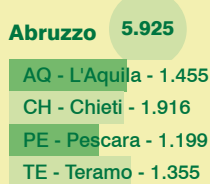
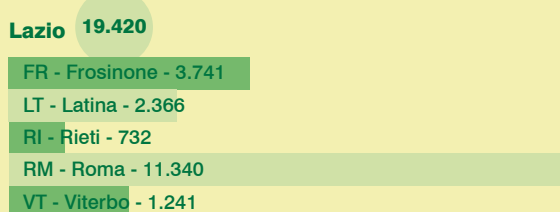
AP - Ascoli Piceno - 935

FM - Fermo - 923

MC - Macerata - 1.571

PU - Pesaro e Urbino - 1.596

**Note 5** - Data include quantities collected from old stock in Cà Rosa (see page 97 ELT collections from old stocks)



**Note 6** - Data include quantities collected from old stock in Buccino (see page 97 paragraph ELT collections from old stocks)

## Objective of collection sustainability

OVERALL, IN 2012 **ECOPNEUS** performed over 78.000 missions, i.e. ELT “collections” at generation points. The choice of the collection modality is made on the basis of the type of vehicles and the evaluations by suppliers of the micro-collection service, that use dump trucks, vehicles with mechanic “spider”, or manually. The logistic companies’ objective is to guarantee the service, optimising at the same time the weight of collections, by making full-load trips and minimising transportation costs; all that reflects in reduced emissions by involved vehicles, and thus on the “carbon footprint” during the transportation phase.

## Efficiency and optimisation in favour of environmental and economic sustainability

THE COLLECTION MODALITY (MANUAL or “by load area”) is not in itself a guarantee of the maximisation of average collection weight, in fact, as you can see in the table below, there is no direct connection between collection modality and the average weight of the collection.



**CAPABILITY OF THE COLLECTION** company to optimise the collection routes is fundamental to guarantee operations efficiency, identifying the best vehicles to be used and organising collection so to guarantee, as much as possible, full-load trips.

**IN A LOGIC OF** total efficiency, the acceptance of Ecopneus system stimulates companies to plan collection according to models that allow the optimisation, and thus costs reduction, as observed in two of companies focuses described in the balance sheet 2012 (see from page 72).

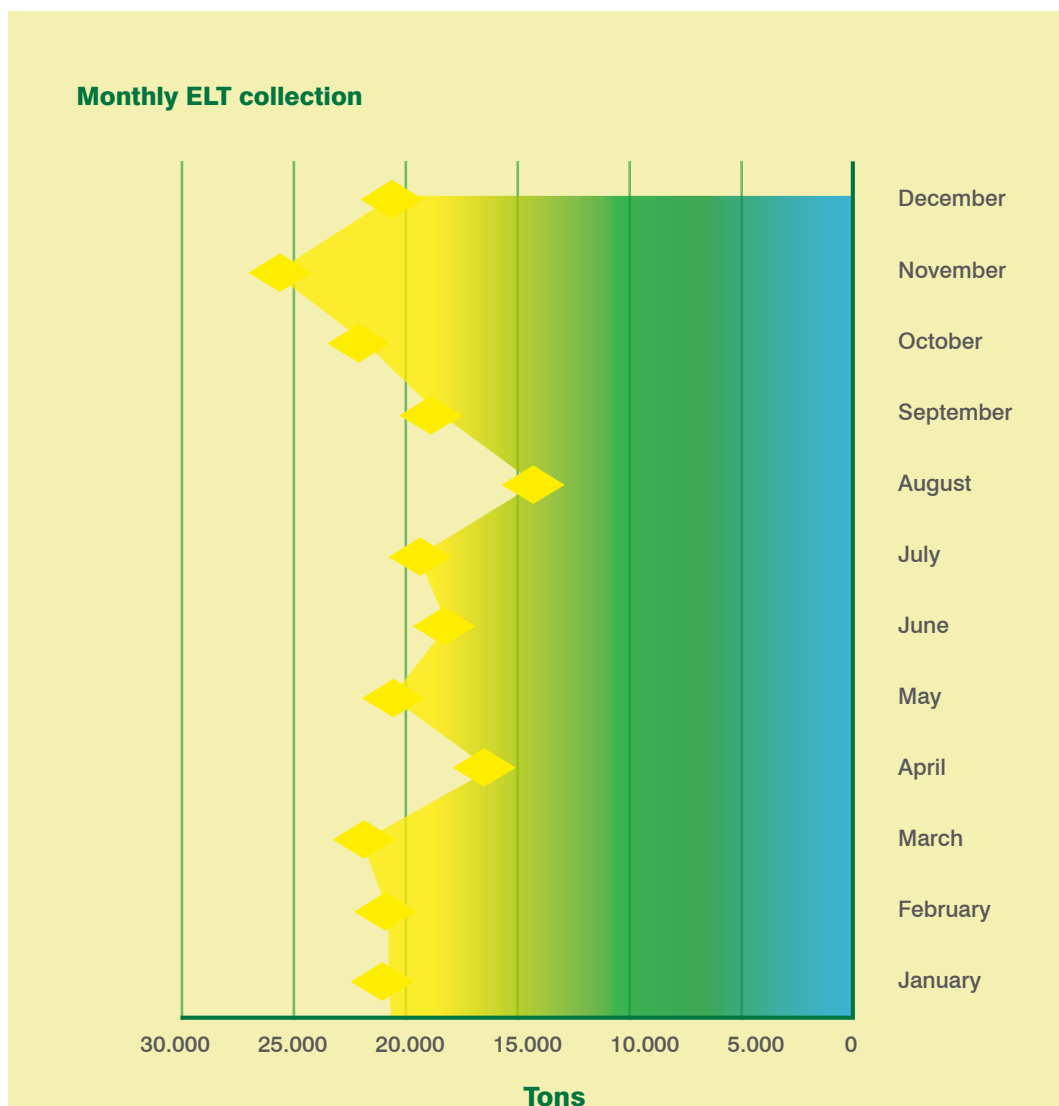
**Table 2 - Number of missions by region and collection mode**



Region	Number of missions	% Container	Average weight container tons/collection	% Container	Average weight container tons/collection	Weighted average
Abruzzo	1.538	6%	3,56	94%	3,87	3,85
Basilicata	503	7%	7,75	93%	2,24	2,35
Calabria	2.666	3%	6,11	97%	4,26	4,29
Campania	9.691	6%	4,47	94%	2,04	2,11
Emilia-Romagna	5.283	13%	3,51	87%	3,20	3,24
Friuli-Venezia Giulia	475	0%		100%	0,92	0,92
Lazio	7.001	10%	3,66	90%	2,59	2,67
Liguria	2.495	16%	4,58	84%	1,55	1,73
Lombardia	10.763	21%	3,09	79%	2,02	2,18
Marche	1.860	21%	4,29	79%	3,60	3,72
Molise	680	3%	2,76	97%	2,97	2,96
Piemonte	5.457	27%	4,85	73%	2,36	2,74
Puglia	6.195	9%	6,16	91%	2,54	2,68
Sardegna	2.281	0%	3,00	100%	5,78	5,77
Sicilia	4.480	9%	10,98	91%	4,57	4,83
Toscana	7.063	27%	4,56	73%	2,32	2,68
Trentino-Alto Adige	3.082	29%	2,87	71%	3,23	3,12
Umbria	1.061	12%	4,18	88%	2,39	2,52
Veneto	5.323	23%	5,13	77%	3,75	4,00
<b>Total</b>	<b>77.897</b>	<b>-</b>	<b>-</b>	<b>--</b>	<b>-</b>	<b>-</b>
<b>Weighted average</b>	<b>-</b>	<b>15%</b>	<b>4.65</b>	<b>85%</b>	<b>3.16</b>	<b>3.26</b>

## Collection trend during the year

ELT COLLECTION SHOWS A certain periodicity, deriving from summer/winter tyre change and from a physiological activity slowdown during summer holidays. In the graphic below, highlighting monthly tons collected during 2012, two peaks can be noticed, the first, negative, in August, and the second, positive, in November. The last quarter of the year is consequently characterised by a higher proportion of ELT collected (about 29% of total), whereas the smaller proportion is collected during the summer quarter (about 22%).



## Law targets excess

**TOTAL QUANTITY OF TYRES** collected and delivered to treatment plants during 2012 amounts to 240.208 tons. The comparison between such an amount and law target set for 2012 shows how this was fully reached.

**Table 3 - Comparison between target and Ecopneus's result.**

Measurement unit: tons.



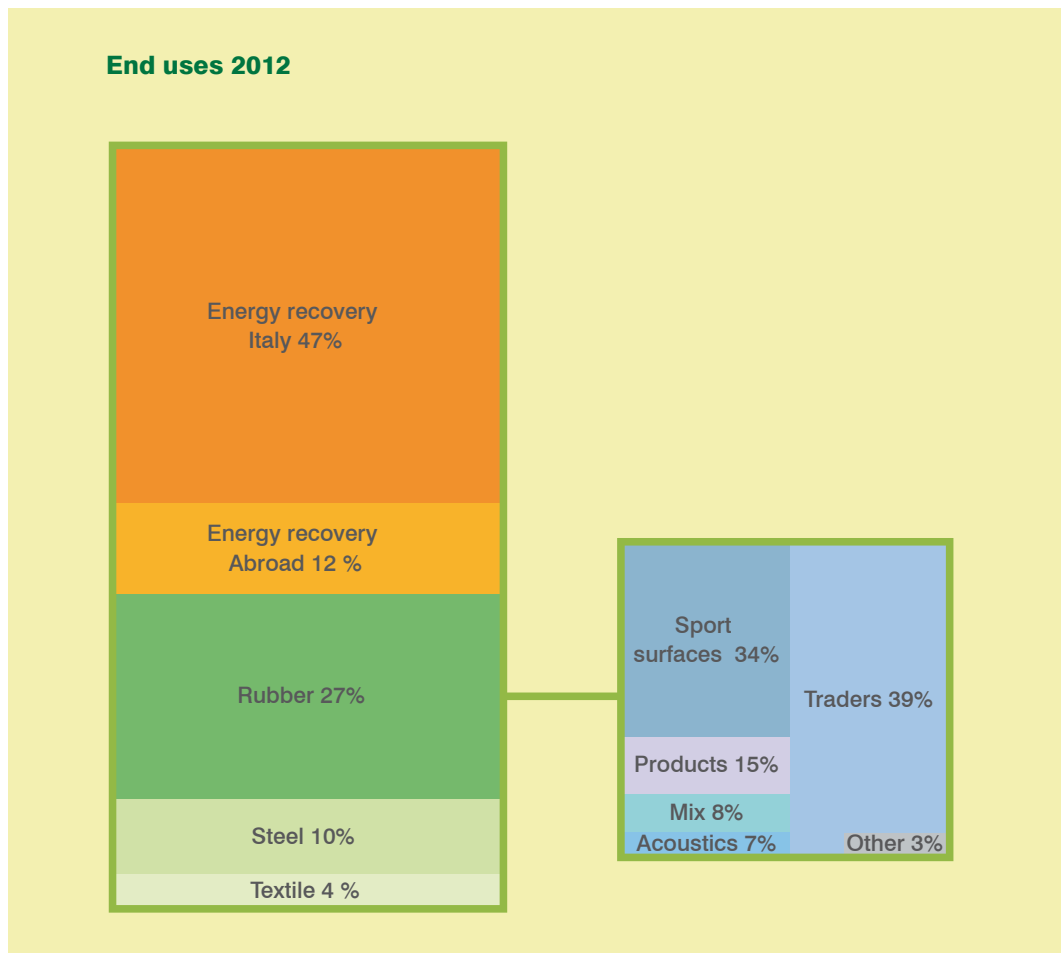
Introduced by Ecopneus partner during 2012	330.479,00
10% deduction for tread consumption <sup>7</sup>	33.047,90
Net of deductions	297.431,10
Export 2012 deduction market share <sup>8</sup>	12.973,31
Net of deductions	284.457,79
20% deduction <sup>9</sup>	56.891,56
<b>Management target 2012</b>	<b>227.566,23</b>
<b>Real collection</b>	<b>240.208,00</b>
<b>Ecopneus result</b>	<b>106%</b>

**Note 7** - Deduction applied according to art. 9, clause 4, MD82/2011.

**Note 8** - Deduction applied according to art. 3, clause 1, MD82/2011, calculated on the basis of ISTAT data (equal to 18.533 tons) and in proportion to the respective introduction shares into the replacement domestic market estimated by Ecopneus - approximately - not lower than 70%.

**Note 9** - 20% deduction applied according to art. 9, clause 1, letter b), MD 82/2011.

## ELT recovery: balanced target between energy and material



**IN THE ALLOCATION BETWEEN** energy recovery and material recovery, collected ELT end uses show the predominance of the former versus the latter. Besides, the need to find a solution in foreign plants for 12% of collected ELT is clearly noticed.

**THIS SITUATION DOES NOT** correspond to the optimal industrial policy that Ecopneus is pursuing and that should be characterised by a higher equalization between energy and material recovery, and the possibility to refer only to domestic plants.

**HOWEVER, SOME STRUCTURAL FACTORS** (greater vocation of national plants toward the production of alternative fuel for energy recovery, a weak market of rubber products, the scanty spread of “green purchases” by public administration) show limits hard to be corrected in the short term, but continue to represent the company’s future goals.

**IN THE AREA OF** material recovery, the option absorbing the greatest quantity is that of sport surfaces, while in the second place we can find recycled rubber products. About one third of granules and powders have been sold as “secondary raw material” to commercial brokers. The share of “modified asphalt” remains marginal, under the item “other”.

## A great commitment for the promotion of the re-use of ELT rubber as a material

### Impacts measurement

**MEASURING THE ENVIRONMENTAL IMPACTS** of an articulated chain such as that of end-of-life tyres is a complex operation, which needs a heavy commitment and involvement of all companies belonging to the system, among which periodical checks need to be done to monitoring and measuring the various consumptions.

**HOWEVER, THIS IS THE** only way to define the chain impacts and to elaborate a strategy to reduce them. For this reason, Ecopneus has started two different projects that in future years will allow to operate in an even more sustainable chain.

### Agreement with the Ministry of the Environment on the Carbon Footprint

**ECOPNEUS, TOGETHER WITH THE** Ministry of the environment, signed an agreement for the measurement of the environmental footprint with the aim of reducing, and thus neutralising, the chain’s “Carbon Footprint”.

**THE AGREEMENT IS ONE** of excellence initiatives of the public-private collaboration fostered by the Ministry of the environment inside the programme about the evaluation of the environmental footprint, i.e. the total amount of gas carbon emitted for the realisation of a product or service by a hundred of Italian companies in different industrial sectors.

**ECOPNEUS IS THE FIRST** limited consortium participating in the initiative among all Italian realities.

**THE DURATION OF THE** agreement is 12 months and its main goal is the definition of a calculation method of the carbon footprint applicable to the whole sector related to the manufacturing of products made with ELT recovery derived rubber, and which foresees:

- ▶ Identification of a series of products produced with materials deriving from ELT recovery and recycling which are the object of the carbon footprint analysis;
- ▶ Analysis of the carbon footprint in various life cycle phases of identified products;
- ▶ Identification of possible actions to reduce emissions in identified products life cycle and their neutralisation.

### Toward a supply chain LCA

**FURTHERMORE, TOGETHER WITH ENEA** of Casaccia (Rome), during 2012 Ecopneus set the bases for a three-year project for the deve-



lopment of chains promoting material recovery, and that foresees the elaboration of a LCA (life cycle analysis).

**ALL THAT WILL BRING** to the fulfilment of audits to be carried out at supply chain's companies. Such audits, already carried out in part in 2012 with the collaboration of Certiquality, will continue throughout 2013, involving all qualified companies. Besides, audits represent an occasion for further measurements, with the aim of creating exhaustive indicators of the environmental, economic, and social impacts of the supply chain, also able, according to major international reference standards, to be reported in the annual balance sheet draft Ecopneus has committed in.

### **Support toward qualification and development of the supply chain**

**AS ANTICIPATED, DURING 2012** Ecopneus engaged Certiquality into conformity audits with respect to environment and safety regulation, which involved a total of 34 companies. Such audits, besides representing a significant action implemented by Ecopneus for the fulfilment of high standards by companies in the chain, allowed the collection of some key information relevant for a first indication of impacts on the supply chain, together with the regular monitoring by Ecopneus of its suppliers' activities.

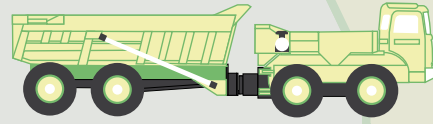
### **Transportation optimisation and rationalisation**

**TRANSPORTATION PHASE REPRESENTS, UNDERSTANDABLY,** a particularly significant role among the main environmental impacts in the supply chain which is under Ecopneus's responsibility. It consists of the movement from ELT generation points to collection centres (CC), from these to shredding centres (SC), and from these to recovery centres (RC).

**THE LOGIC GOVERNING SUCH** transfers is that of **closeness and paths minimisation**.

**NEVERTHELESS, ONCE AGAIN, IT** is necessary to bear in mind some structural characteristics that sometimes do not allow the compliance to such principles. For example, a shredding plant is not always available in the same region, or, to favour the manufacturing of products suitable for material recovery, plants located abroad were preferred.

**THE FOLLOWING TABLE REPORTS** in details the destination of collected ELT to shredding centres.



**Table 4 -** ELT distribution to shredding centres.

Quantities by region of ELT (tons) distributed to SC	Abruzzo	Basilicata	Bavaria	Calabria	Campania	Emilia- Romagna	Lazio	Lombardia
<b>Abruzzo</b>	3.674					13	11	
<b>Basilicata</b>								
<b>Calabria</b>		1.409		4.183	50			
<b>Campania</b>	294	6.043			7.726		3.651	
<b>Emilia-Romagna</b>			1.079			1.967		
<b>Friuli-Venezia Giulia</b>								
<b>Lazio</b>	62						16.635	
<b>Liguria</b>								
<b>Lombardia</b>			2.086			11		576
<b>Marche</b>						22	68	
<b>Molise</b>	1.348	64			74		384	
<b>Piemonte</b>			3.051					
<b>Puglia</b>		92		468			15	
<b>Sardegna</b>								
<b>Sicilia</b>		917		3.082	466			
<b>Toscana</b>						203	729	
<b>Trentino-Alto Adige</b>								
<b>Umbria</b>							521	
<b>Veneto</b>			1.119					
<b>Total</b>	<b>5.378</b>	<b>8.524</b>	<b>7.335</b>	<b>7.733</b>	<b>8.317</b>	<b>2.217</b>	<b>22.014</b>	<b>576</b>

	Marche	Ober Österreich	Piemonte	Puglia	Sardegna	Sicilia	Toscana	Trentino-Alto Adige	Umbria	Veneto	Total
	1.518								401		5.617
				1.121							1.121
				5.724							11.366
				3.648					121		21.484
	889	1.807	122				307	4.061	647	7.918	18.798
										444	444
	456						189		1.376		18.718
			4.121				144			64	4.328
							14	7.085		13.546	23.318
	6.337									92	6.519
	85										1.954
		9	5.077				24	3.295		3.077	14.532
	49			9.621							10.244
					3.071						3.071
				5.805		11.301					21.572
	5.445		137				1.274		4.323	4.548	16.658
								6.098		1.184	7.281
	186						61		1.117		1.885
		4.508						5.853		3.663	15.143
	14.965	6.324	9.457	25.919	3.071	11.301	2.012	26.392	7.985	34.534	204.054 <sup>10</sup>

**Note 10** - total ELT transported to shredding centres is slightly different from total ELT collected in 2012 (240.208 tons) due to functional lead time between storage phase and plant delivery phase.

### ELT processing network

**THE LOCATION OF SHREDDING** centres necessarily impacts on the distance covered to reach them. An indicator is the weighted average of distance by tons of ELT transported from CC to SC. In regions such as Sardinia, Lazio, and Marche, where almost all ELT are delivered to SC located in the same region, or in cases when the distance covered is not far from regional borders (for example from Basilicata to Puglia), this indicator shows the lowest values.

**Map of shredding plants  
partners of Ecopneus at  
31/12/2012**



**CONVERSELY, THE LEAST DESIRABLE** conditions can be found where the major part of ELT collected in the territory has to be sorted in different SC (an example is the case of Tuscany, where the value of the weighted average is very high).

**NEVERTHELESS, TRANSPORTATION EFFICIENCY IS** affected not only by the distance between collection centre and destination plant, but also by the type of vehicles and thus the transported quantities during each single trip. In case transportations on short distances are made by means of vehicles with small payload, the indicator shows anyway a high value (such as in Trentino Alto Adige).

**Table 5 - Weighted average weight from CC to SC**



Region	Tons from CC to SC	Km/tons Weighted Average
Abruzzo	5.617,41	21,47
Basilicata	1.121,40	15,70
Calabria	11.366,34	36,67
Campania	21.484,03	19,73
Emilia-Romagna	18.797,84	28,93
Friuli-Venezia Giulia	443,54	38,03
Lazio	18.718,11	11,41
Liguria	4.328,09	37,49
Lombardia	23.317,72	35,07
Marche	6.519,44	14,79
Molise	1.954,31	23,93
Piemonte	14.532,03	32,88
Puglia	10.243,61	25,42
Sardegna	3.071,22	7,16
Sicilia	21.571,77	30,17
Toscana	16.658,16	40,59
Trentino-Alto Adige	7.281,38	23,91
Umbria	1.885,17	23,51
Veneto	15.142,71	23,24
<b>Total</b>	<b>204.054,28</b>	
<b>Weighted Average</b>		<b>27.05</b>

**ELT TRIP TOWARD THEIR** second life cannot end by shredding but, where granules and/or powder production is not carried out, i.e. secondary raw materials are not produced, their delivery is necessary at energy recovery plant in order to finalize the recovery process. In particular, in case of energy recovery, shreds, when leaving the shredding centre, are still considered a waste, thus it is still under Ecopneus's responsibility.

**In 2012, SHREDDING CENTRES** belonging to Ecopneus supply chain produced 105.812 tons of pieces suitable for energy recovery, which were distributed to recovery plants as shown in the table below.

**Table 6 - Shreds destination**



Distribution to recovery plants (values are expressed in tons)	Abruzzo	Basilicata	Calabria	Emilia-Romagna	Lazio	Puglia	Sardegna	Veneto	Marocco	Romania	Slovacchia	Turchia	Total
<b>Abruzzo</b>	386												386
<b>Calabria</b>										4.421		3.636	8.057
<b>Campania</b>	418		1.078	146							878	2.219	4.739
<b>Emilia-Romagna</b>				3.404				208					3.612
<b>Lazio</b>	51	51		175							1.287		1.564
<b>Marche</b>					13								13
<b>Puglia</b>	738	11.072		677		2.116			4.046			3.681	22.330
<b>Sardegna</b>							4.813		4.990			6.462	16.265
<b>Sicilia</b>									8.890				8.890
<b>Toscana</b>	332			668							1.989		2.989
<b>Veneto</b>	30			8.370				28.567					36.967
<b>Total</b>	1.955	11.123	1.078	13.440	13	2.116	4.813	28.775	17.924	4.421	4.154	15.998	105.812

### Transportation to energy recovery

**DISTANCES TRAVELLED FROM SC** to RC are often consistent due to the extra-national location of such plants. In some cases such distances can be covered by sea.

**THE TABLE BELOW SHOWS** the quantification of km/tons (by land and/or sea) travelled toward energy recovery. This is mainly performed at cement works, where the use of ELT instead of fossil fuel presents many advantages, besides the guarantee of an excellent calorific power, such as the reduction of combustion gas emissions. The table below compares calorific power and CO<sub>2</sub> emissions produced during the combustion of ELT and other commonly industrially used fuels: same physical state and generated heat, ELT allow a reduction of emissions in comparison to the use of carbon and pet-coke.

**Table 7 - CO<sub>2</sub> Emission**

Factor of Fuels (Source: World Business Council on Sustainable Development - WBCSD, 2005)

Fuel	Calorific Power (Gigajoule/ton)	Emissions	
		kgCO <sub>2</sub> /tons	kgCO <sub>2</sub> /Gigajoule
ELT	32.0	2,270	85
Carbon	27.0	2,430	90
Pet Coke	32.4	3,240	100
Fuel oil	46,0	3,220	70
Natural Gas	39,0	1,989	51
Wood	10,2	1,122	110

**MOREOVER, A SURVEY FROM** Portland Cement Association (PCA-2008) carried out at 31 American cement works highlighted a significant reduction of emissions of NO<sub>x</sub>, SO<sub>2</sub>, and Dioxins/Furans in gases deriving from ELT burning as a partial substitution (max 20%) of carbon and pet-coke.

**THE GREATLY PREVAILING SHREDS** destination produced in 2012 had been toward cement works. A minor quantity was destined to plans for the production of electricity and, in very few cases, incinerators.



**THE EXTRAORDINARY USE OF** incinerators in 2012 was linked to the system starting phase and the need of solving accumulation situations of previous years.

**IN ORDER TO FULFIL** such operation authorised plants were selected, able to offer the maximum safety and reliability guarantees, and to which 6.200 ELT tons were delivered, representing about 2.5% of total ELT recovered, as detailed here following:

Destination region	Ton	
Calabria	1.079	Gioia Tauro Plant
Emilia Romagna	320	Gruppo Hera Plant
Sardegna	4.800	Tecnocasic Plant <sup>11</sup>

**Note 11** - The use of Tecnocasic plant exclusively satisfied a need linked to the start of the system. In fact, in Sardinia as of today there are neither plants using rubber granules or powder, nor plant for energy recovery: for this reason only a small quantity of regionally produced shreds were sent to this kind of treatment that, although performing energy recovery, is classified as waste disposal. Such a solution, that resulted to be fast (with a distance covered between SC and plant less than 50 km) and almost at no cost, contributed to guarantee regular flows to regional companies - during the system's starting phase - without compromising the whole regional logistic balance.

**IN THE NEXT FUTURE**, this solution will be used exclusively in case of emergency and to solve exceptional ELT piling situations.

**SHREDS DELIVERY TO PLANTS** abroad (located in Morocco, Turkey, Rumania, Slovak) determined a higher weighted average weight from SC to RC.

**Note 12** - During 2012, in Italy only 6% of thermo energy necessary for cement production derived from alternative fuels, compared to 19.4% average in Europe (source: AITEC).

**THIS SITUATION CAN BE** once again ascribed to the structural characteristics of the national plant system, such as the use of alternative fuels in domestic cement works much lower than in other European countries<sup>12</sup>. In case of sea transportation, the low values of kilometres per tons can be explained taking into consideration trips made by means of cargo ships, covering long distances transporting a great quantities of materials.

**Table 8** - Weighted average ►  
weight from SC to RC

Region	tons exiting from SC	km land/tons	km sea/tons
Abruzzo	386	1,28	0,00
Calabria	8.057	75,65	1,28
Campania	4.739	30,19	1,50
Emilia-Romagna	3.612	8,40	0,00
Lazio	1.564	47,42	0,00
Marche	13	21,75	0,00
Puglia	22.330	4,12	0,39
Sardegna	16.265	2,36	2,35
Sicilia	8.890	0,85	2,63
Toscana	2.989	49,61	0,00
Veneto	36.967	2,55	0,00
<b>Total</b>	<b>105.812</b>	<b>-</b>	<b>-</b>

### Analysis and qualification of transportation fleets

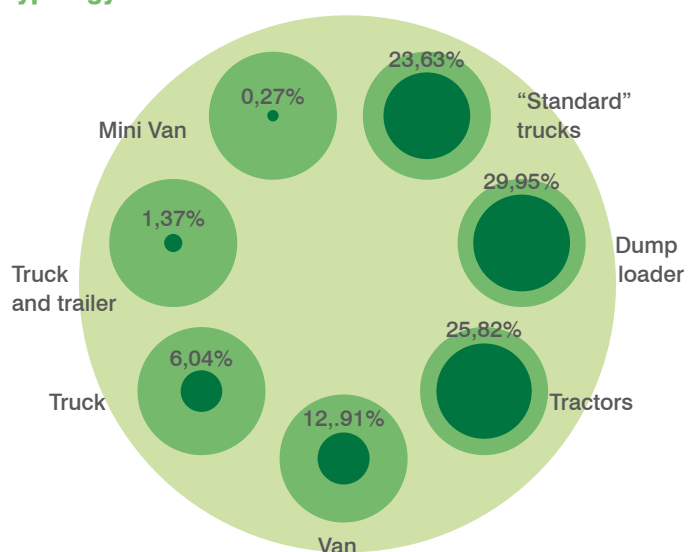
**TYPE OF VEHICLES USED** and their related fuel consumptions are another useful tool for the quantification of environmental impacts during transportation phase.

**SUCH DATA REPRESENT THE** necessary starting point for CO<sub>2</sub> emissions calculation, which is a widely used indicator in the environmental sustainability evaluation of processes and products. For this reason, Ecopneus carried out a survey with those companies that provided transportation service in 2012, asking the composition of company fleet used for ELT transportation, the km travelled, and the related

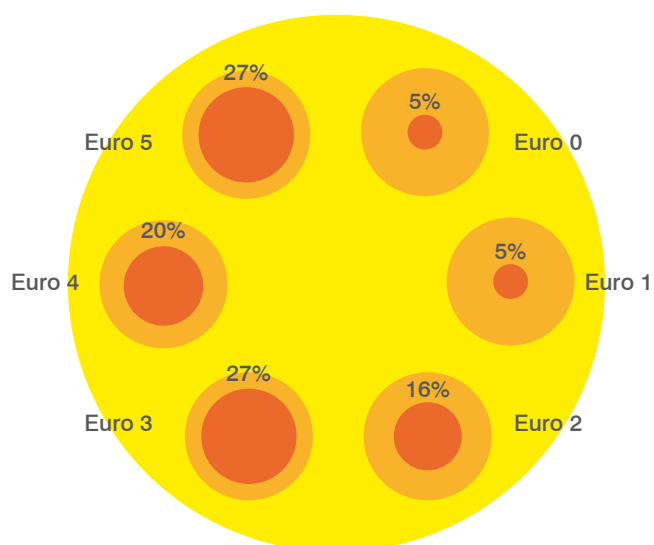
fuel consumptions. Reported moves refer to ELT transportation from generation points to collection centres, and from these to shredding centres, and their related fuel consumption, for the year 2012.

## Results of business fleet survey

### Composition of business fleet typology vehicles on total



### Composition of business fleet Euro Codes effect on total



**VEHICLES USED FOR ELT** collection and transportation are mainly represented by trucks and tractors. Business fleet of Ecopneus's suppliers in 2012 was made up of two thirds Euro 5, while older vehicles (Euro 0 and Euro 1) represented 10% of total.

**Note 13** - Shown data correspond to indications from 15 out of 16 suppliers of collection and transportation service in 2012.

**BESIDES, LOOKING AT COMPANIES'** indications<sup>13</sup>, you can see that for ELT collection and transportation over 5.6 million km have been travelled, with a consumption of 1.9 million litres of fuel.

**THIS IS A SNAPSHOT**, in 2012, of vehicles used for collection and transportation, representing a starting point for future quantifications.

**Table 9 - CO2 Emission Factor of Fuels** (Source: World Business Council on Sustainable Development (WBCSD), 2005)



Type of vehicle	Euro 1	Euro 2	Euro 3	Euro 4	Euro 5	Tot
Number	23	74	130	98	131	481
Total Km	5.638.518					
Total consumption (litres)	1.966.148					
Km/lt	2,82					

## Energy consumption

**ENERGY REPRESENTS ONE OF** the most relevant environmental impacts during ELT shredding. The audits carried out by Certiquality, on request of Ecopneus and mainly targeted to verifying the regulation conformity with reference to environment and safety, produced the first data on plants energy consumption. On the whole, the indicator "energy consumption per treated tons" has been obtained for 20 plants. Noticeable is, first of all, a significant variability due, in part, to the different plants "vocation". The consumption is higher where ELT shredding leads to granulation phase, while the production of shreds means a simpler process, and therefore a lower consumption. Isolating plants producing only shreds (and/or with shreds production below 20%) from those mainly producing granules (see column related to granule production), the average values shown in the table can be obtained. Anyway, a certain variability remains, due to different consumptions of plants with comparable output, a clear sign of the necessity to investigate more deeply the measurements carried out and of the possible improvement margins of energy performance of the shredding phase.

**Table 10 - Energy consumption**  
audited plants in 2012



N. plant ELT	Processed (tons)	Produced granule (tons)	Granule production by entry tons (%)	kW/h tons
1	2.094,16	1.361,00	64,99	286,40
2	5.514,16	0,00	0,00	48,10
3	6.828,34	597,50	8,75	38,75
4	1.853,00	785,21	42,38	386,89
5	2.276,13	1.597,13	70,17	340,05
6	2.315,00	1.534,00	66,26	135,42
7	1.966,43	346,40	17,62	121,30
8	6.230,00	867,95	13,93	67,15
9	5.699,84	4.265,26	74,83	229,83
10	5.720,00	3.090,00	54,02	250,41
11	5.111,40	1.230,14	24,07	227,67
12	1.251,17	1.166,90	93,27	119,89
13	1.613,00	150,00	9,30	39,34
14	1.276,26	895,56	70,17	224,99
15	6381,73	1.168,66	18,31	36,62
16	6.069,44	3.775,83	62,21	140,37
17	8.902,00	0,00	0,00	31,75
18	2.793,00	1.810,94	64,84	279,72
19	28.984,82	0,00	0,00	55,60
20	2.986,26	2.986,26	100,00	136,03
Average kW/h tons shreds production plants		54,83		
Average kW/h tons granule production plants		229,81		

## Supply chain sustainable management

**IN 2012 THE FIRST** evidences were collected on how global management, with its principles of efficiency, transparency, and costs attention, had triggered a process of internal development inside companies, made of new human resources acquisition, of their own processes improvement, of interiorisation of the “network making” logic, of new organisational models and support tools development.

**ALL THESE CHANGES GO** in the same direction: that of a sustainable supply chain, from an economic standpoint (with the consequent reduction of the environmental fee paid by end users), from an environmental standpoint (with lower consumptions and thus lower impacts), from a social standpoint (for example, with the creation of new jobs, or the stabilisation of existing ones).

**THREE CASE STUDIES FOLLOW**, which clearly show some significant innovations produced by the entrance into the new system.

### The “DIFE” case - an example of management innovation

**DURING THESE FIRST YEARS**, the Ecopneus system has been able to generate industrial-economical satellite activities in the territory, coherently with its strategy linked to Green Economy and Shared Value themes, together with as many important social and environmental consequences that, in the next future, will be able to be measured and reported more precisely.

**THIS IS THE CASE** of DIFE spa, a company operating in the environmental field offering services of waste management, clearing, waste treatment and recovery, dangerous and non-dangerous waste transportation. This is a company with a thirty-year old experience in the field, with its head office in Serravalle Pistoiese (PT), certified ISO 9001, 14001, 18001.

**THE AGREEMENT WITH ECOPNEUS** started in 2011, when DIFE won the tender for the assignment of the collection and transportation service for 2011/12, and it will continue in the two-year period 2013/14, since the company has re-confirmed itself among the winners of the second tender.

**DIFE’S COMPETENCE AREA IS** very wide, including Tuscany and Umbria, with an estimated number around 2,550 ELT generation points served, where the company performs the service of micro-collection directly and, at the same time, coordinates a network of 8 subcontractors.

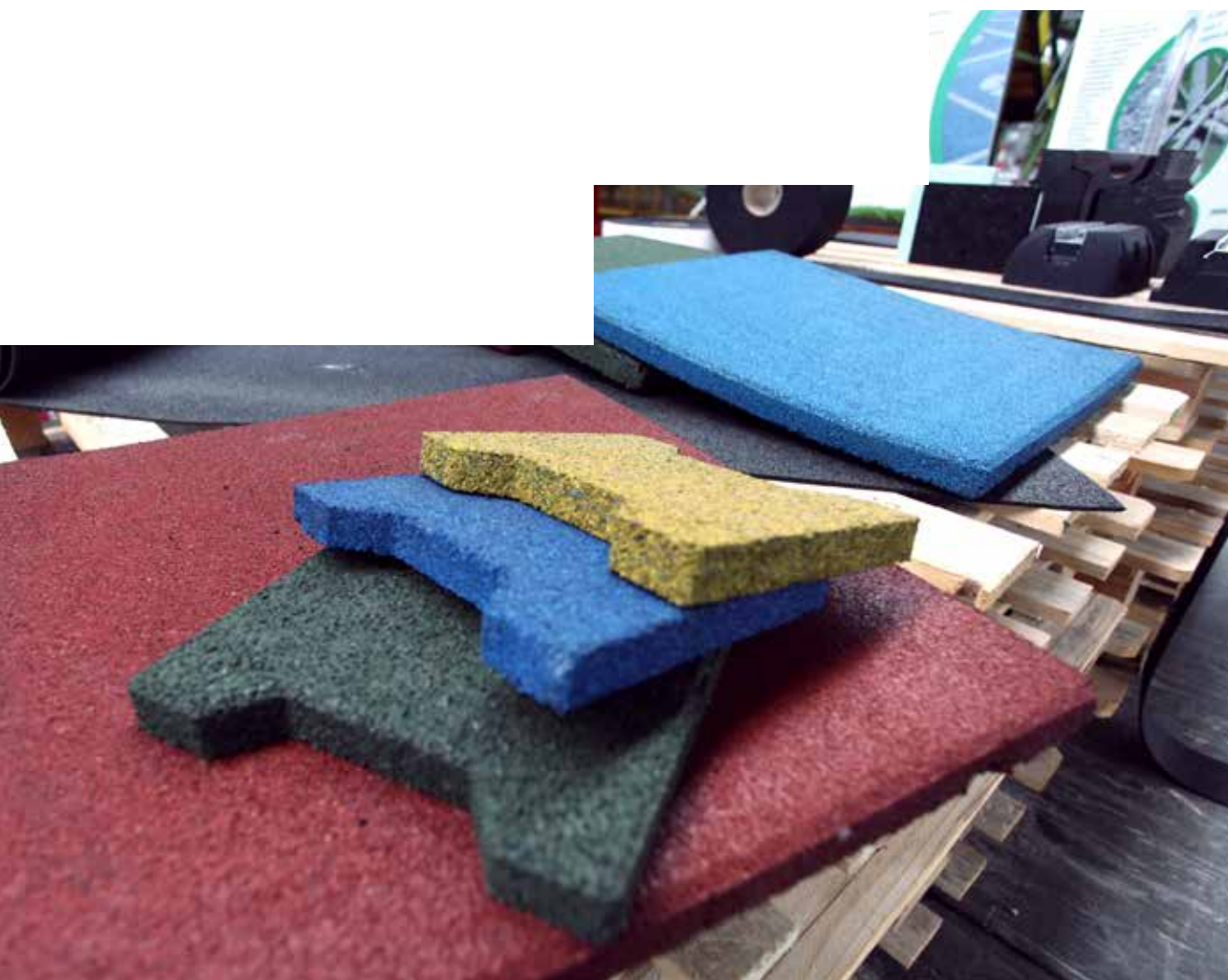
**By adhering to the** Ecopneus system, ELT collection and transportation have acquired a strategic meaning in the overall activities performed, so as to represent a significant share of the company's turnover (Ecopneus's activities, started in the last months of 2011, represented 9% of 2011 turnover, and 30% of 2012 turnover). This pushed the company to invest, hiring personnel exclusively dedicated to ELT-related activities - in particular, 2 persons were added to the organisation to manage Ecopneus's activities - and to look for solutions that could offer a quality service, at competitive costs. From a logistic point of view, this means to identify a collection model suitable to optimise collections at generation points, with the most proper vehicles travelling always "full loaded".



**THROUGH THE IMPLEMENTATION OF** a “Tyre Dealers identification Browser” (BINGO), an answer to such a need was given. Elaborated thanks to the company’s internal competences, but with the support of Ecopneus Area Manager, this software allows to quickly solve criticalities most commonly faced by logistic companies: a call from the tyre dealer that does not have the necessary quantity to fill the vehicle.

**IN THIS SITUATION THE** software allows to display which are the other ELT generation points present in a chosen area but, above all, for each of them, it allows to know the number of days passed from the last collection and the percentage of “full” in that generation point, on the basis of historical data. This means that, on the basis of information made available by the software and assessing the quantity necessary to fill the vehicle, it is possible to identify the closest tyre dealer to optimise the collection trip.

**BESIDES, SUCH A STRUCTURED** database allows the company to monitor historical collections, intervening in case of long calls suspensions by some dealers. Before adhering to Ecopneus system, there was no measurement of historical collections, with average monthly



quantity collected in each generation point and days passed from the last collection.

**THE RESULTS OF THE** application of such a model are measured in terms of increased collected quantities and reduced costs, these last represented by a “cost per vehicle” that includes personnel, maintenance, depreciation, and fuel costs.

**THE FIRST MONITORING PERFORMED** by the company achieve positive results on software application, which allowed collection increase and costs reduction, stimulating the interest of other logistic companies that were presented the software concept design during a convention organised by Ecopneus.

#### DIFE case – Serravalle Pistoiese (PT)



**Note 14 - Articles 208, 209, 210, and 211** of Title I of Part Fourth of Legislative Decree 152/2006 regulate ordinary procedures to obtain and renew the authorisation necessary for the creation and exercise of waste dumping or recovery plants. **Articles 214 and 216** of the decree foresee *simplified procedures* for being authorized to waste recovery operations complying with reference technical norms (Ministerial Decree February 5<sup>th</sup>, 1998, modified by Ministerial Decree n. 186/2006, referring to non-dangerous waste recovery; Ministerial Decree June 12<sup>th</sup>, 2002, n. 161, referring to dangerous waste recovery). As far as ELT are concerned, conditions set for material recovery according to simplified procedure (set forth by point 10.2 - annex 1, sub-annex 1 of MD 2/5/98) are very stringent, limiting the possibilities of a “simplified” authorised plant to produce secondary raw material.

### The “TRS” case: investing in process and product improvement

**ALSO TYRES RECYCLING SUD** (TRS) of Balvano (PZ), a company producing granules and powder from ELT, represents an example of the industrial-economic satellite activities generated by Ecopneus in the territory.

**THE PARTNERSHIP BETWEEN TRS** and Ecopneus started in March 2012, when the company completed the path to obtain the “ordinary” authorisation<sup>14</sup>. Although provided with a modern plant, an adequate structure and the necessary know how, the ordinary authorisation represented, in fact, the prerequisite to enter the system, as imposed by Ecopneus coherently with a management finalised to prefer material recovery versus energy recovery.

**THE EFFORT PUT TO** upgrade its authorisation is today rewarded by the advantages born by entering the system, as well as the time in waiting seems to be recovered thanks to a management toward the constant improvement of its performances.

**THROUGH ITS QUALIFICATION AS** Ecopneus’s supplier, the most important change can be summarised into two fundamental aspects: constant flows and timely payments. These two guarantees offered by Ecopneus allowed TRS to plan the production of secondary raw materials and to make a series of investments.



**A DISCONTINUOUS FLOW OF** tyres to be treated and, above all, a discontinuous liquidity deriving from ELT treatment prices, were limiting the possibility of production programme so to satisfy granules or powder requests, discouraging further investments in the commercial department's activities.

**BY ENTERING ECOPNEUS SYSTEM**, the total activity volume increased significantly, registering a +50% of its turnover (the company treats almost completely ELT deriving from Ecopneus's circuit). Higher activity volumes require higher manpower; the company personnel grew from 6 employees during the period before March 2012, to 29 employees today. Of these, 24 are employed in the continuous cycle plant.

**FROM INVESTMENTS POINT OF** view, the company made a series of choices finalised toward a more efficient management inside the manufacturing process.

**THE HIGHER LIQUIDITY ALLOWED** a better warehouse and maintenance management, allowing to store spare parts with quantities and varieties sufficient to promptly intervene in case of ordinary and extraordinary maintenances, avoiding long plant stops and thus increasing the overall productivity. A better maintenance programming and fulfilment, together with the possibility to buy last generation motors, allowed a positive incidence on energy consumption, and therefore on the company's economic and environmental performances.

**NOTWITHSTANDING THE POSTPONED START**, due to the need to obtain an authorisation that would not limit in any way the possibility to produce secondary raw material, today TRS is one of the best suppliers of ELT treatment within Ecopneus system, qualified for the two year period 2013/14 as well. Besides the above mentioned transformations, entering the system provided lifeblood to be able to programme new steps toward the future.

**ALREADY CERTIFIED ISO 9001**, 14001 and EMAS, the company is working to integrate as well ISO 18001 in its management system. Besides, it is finalising the technical and authorisation phases to install a steel cleaning plant, specifically designed to clean ELT derived harmonic steel and to obtain a further secondary raw material from ELT treatment.

ONE OF THE MOST relevant characters of the company's strategy is the attention put to the commercialisation of produced granules. The organisational sales department signed commercial agreements with domestic and foreign users that mainly use granules in the production of sport surfaces.

THEREFORE, TRS MANAGEMENT IS in line with Ecopneus's target for the supply chain, i.e. these plants can be considered as a place where resources are enhanced, instead of a place where wastes are treated.

### The "TRS" case – Balvano (PZ)



### The “GEOS” case: management control and satisfaction at generation points

**THE LAST OF THE** three case studies shows once again the positive results in terms of industrial-economic network activities generated by Ecopneus, with a different collection organisational model that shows how Ecopneus stimulated different solutions, applicable to specific territorial background.

**GEOS ENVIRONMENT, CERTIFIED ISO** 9001 and 14001, is a multiservice company headquartered in Campania (precisely at Pastorano, Caserta), able to offer a wide range of services in the field of engineering, logistics, and environmental management (recovery of contaminated sites, industrial waters purification and treatment, waste collection and recovery).

**GEOS WON THE FIRST** of Ecopneus's tenders, and is among the suppliers selected also for the next two year period.

**BY ENTERING THE ECOPNEUS** system, ELT collection, which was before made sporadically, is now one of the most significant business activities, today representing about 25% of the total turnover. This aspect required the creation, within the company's organisation, of positions specifically dedicated to Ecopneus's activities. In fact, today there are three professionals in the organisation dedicated to ELT collection management, with different tasks.

**AMONG THE SUPPLIERS OF** Ecopneus system logistic service, Geos operates according to a model that foresees the assignment of the service to a network of subcontractors located in strategic positions within the area to be managed. This last corresponds to Campania and Basilicata, where there are about 2,800 ELT generation points served. The network coordinated by Geos includes 10 transporters and 8 collection centres from which ELT are then moved toward shredding centres.

**AMONG COLLECTING COMPANIES, ONLY** one belongs to the group, where other suppliers were selected among companies authorised to ELT collection and transportation, able to guarantee a high level of professionalism. In fact, within Geos's model, suppliers' selection represents a key topic to guarantee high quality standards and a capillary collection in the territory served. Wherever possible, one of the choice criteria followed is the coincidence between Collection Centre and Shredding Centre; this allows to avoid a further transfer with an overall reduction of transportation on tyres and its related generated emissions.



**ONE OF THE THREE** organisational persons exclusively in charge of ELT logistics in Geos, is specifically dedicated to all aspects related to the selection, monitoring and suppliers' technical assistance. Besides the continuous monitoring and assistance of its sub-suppliers, Geos devotes many energies to monitoring the service provided at ELT generation points.

**SINCE THE VERY FIRST** steps of the partnership with Ecopneus, Geos has been carrying out its own generation points mapping, present on its reference territory, activating a detailed information campaign to support Ecopneus to spread the knowledge of the system functioning with tyre dealers and retailers. Generation points were promptly informed, through folders delivery, about the possibility to register on Ecopneus' website and to request free of charge collection of its ELT.

**THE SECOND PROFESSIONAL PERSON** responsible for ELT, is in charge of monitoring, through periodical visits to generation points served, the quality of the provided service, verifying the timeliness with respect to plans, adequacy of tools used to provide the service, and the overall satisfaction of ELT generation point's manager.

**THE LAST OF THE** three ELT dedicated professional persons is in charge of administrative aspects, with particular reference to the registration of requests and of law documentations (waste identification forms, transport documents, etc.).

**FROM A MANAGEMENT STANDPOINT**, the control operated by Geos includes data collection about the number of missions carried out c/o applicants, collected quantities, average time spent to process requests. That allowed the company to create a database that includes the historical collections made, allowing the identification of "unusual" situations, such as long interruptions of requests by some generation points, verifying the need to carry out a collection through a call to the generation point.

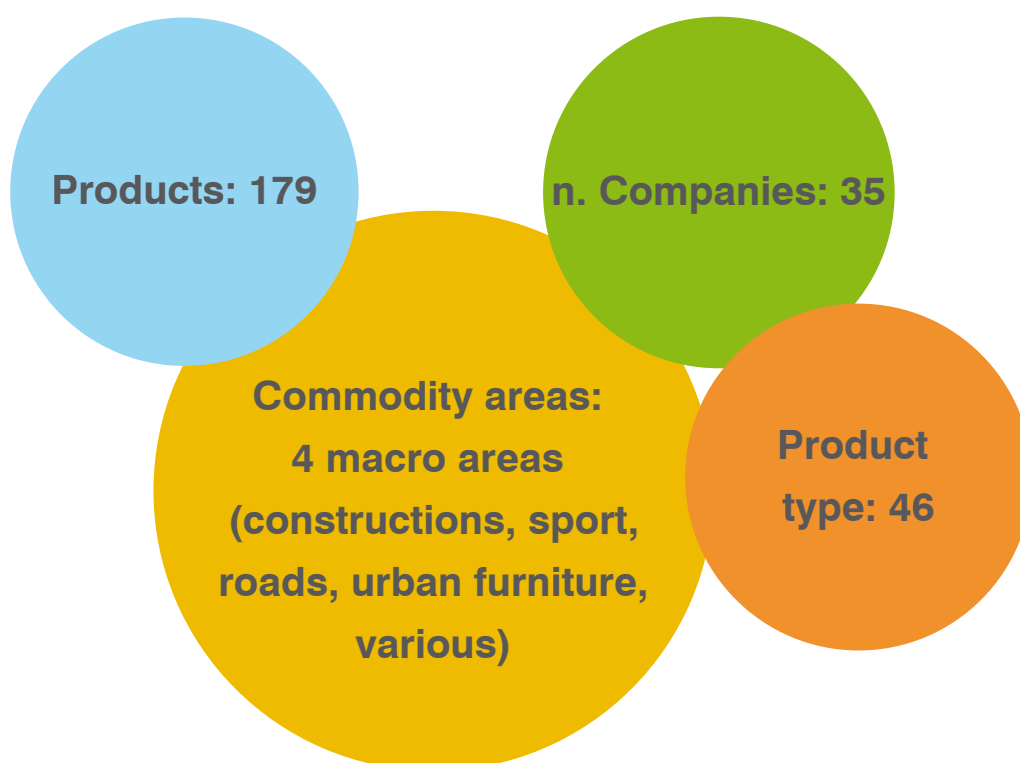
**IN 2012 GEOS COLLECTED** 21,593 end-of-life tyres tons, with the same target for 2013. By means of a constant control of its subcontractors and a continuous generation points' contact and monitoring, Geos is moving toward this target through a collection that, in the first four months of 2013, is confirming the previous year's data, despite an overall consumption decrease at national level, which is generating a reduction in tyre dealers and ELT generation points activities.

## Applications promotion and research contribution

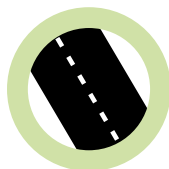
### Online catalogue of ELT rubber products

**DURING 2012, ECOPNEUS FURTHER** increased its activities in the field of the development of new uses, enriching them with new and diversified projects. The main axes on which lay some significant initiatives are represented by “**sport**” and “**road**” sectors, still considered two strategic areas for ELT rubber recovery, with the highest technical, environmental, and social potential.

**BESIDE THESE TWO CORNERSTONES**, it is necessary to quote the information and diffusion commitments about all possible rubber recovery uses, with the creation of the first **catalogue of ELT rubber products** ([www.ecopneus.it/it/catalogo-prodotti](http://www.ecopneus.it/it/catalogo-prodotti)), realised in collaboration with Matrec (Eco Material Database), a free of charge online window for Italian companies producing ELT granules or powder, and/or manufacture various products for different civil or industrial uses.



### Some examples of presented products



#### Roads and furniture:

kerbs  
street borders  
cycling paths  
road signs



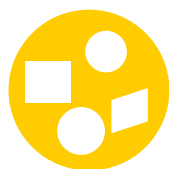
#### Sport:

multifunctional fields  
antitrauma  
children playing fields  
athletic tracks



#### Construction:

footstep-proof  
soundproofing  
wall covers  
anti-vibration



#### Various:

accessories  
office articles  
furnitures

### Rubber products catalogue

ELT rubber products catalogue made by Ecopneus in collaboration with Matrec (Eco Material Database), is the first online catalogue of ELT recycled rubber products manufactured by Italian producers. The user can access to a series of product information: manufacturing company references, product characteristics, recycled materials origin and type. In particular, the recycled raw material origin is reported, with the aim of promoting a fully Italian supply chain. The catalogue - under continuous implementation - presents today about 180 products and 30 different companies, thus representing a precious information collection for ELT rubber recycled products promotion.

### Ecopneus Quality trademark

**FOR ANY USE CONSIDERED** for ELT recovered rubber (asphalts, durable goods, sport surfaces, etc.), a necessary condition at the base of final production quality is the quality of used materials (granules and powder).

**STARTING FROM THIS AWARENESS**, with the aim of stimulating quality production in the supply chain's plants, Ecopneus made an **agreement with Certiquality** - certification body specialised in the certification of management system for quality, environment, safety, products certification, audit and training - and Remade in Italy - trademark for products and materials deriving from Italian recycling and reuse, with the Ministry of the Environment as technical partner ([www.Remadeinitaly.it](http://www.Remadeinitaly.it)) - for the definition of a technical procedural guideline related to the release of an "Ecopneus Quality trademark" on ELT recovered products.

**THIS IMPORTANT INITIATIVE INTENDS** to stimulate the internal knowledge of treatment plants belonging to Ecopneus supply chain, able to obtain a trademark certifying their processes and products quality, on which Ecopneus logo represents a further professionalism guarantee for the end user.

**INDEED, THE TRADEMARK WILL** certify the superior quality of granules and powders manufactured by certified plants, their environmental sustainability, their healthiness and safety features, and the respect of ethical specifications and of their manufacturing process environmental performances.

### A quality trademark for companies and consumers

**THE PATH FOR OBTAINING** the trademark will be voluntarily, started by the companies participating in the Ecopneus system, which must have previously received the Remade in Italy certification.

**THE QUALITY TRADEMARK ECOPNEUS** will be valid for three years, and will be released after a series of audits performed by Certiquality.

**AUDITS ARE FINALISED TO** verify quality and chemical-physical characteristics of the product, the respect of ethical-social requisites of company management (respect of human rights, of employees, promotion of employees' health and safety, etc.), environmental performances control (for example in terms of energy and water consumptions, and waste production) and safety control (for example the number of incidents, dangerous events, etc.).

**GRANULES AND POWDER “USERS”**, as well, i.e. companies buying these materials to produce durable goods, will be able to obtain an Ecopneus quality trademark, that, in this case, certifies the content of a specific product to be **“Ecopneus certified rubber”**.

### Studies and researches on ELT rubber use's quality and safety

**DURING 2012, IN THE** field of promotion of ELT granule use to make sport surfaces, Ecopneus presented the **dossier “Recycled rubber and football fields with artificial turfs”**, born thanks to a collaboration with Melete - a company founded by a group including industrial, institutional, and academic partners from the University of Milan and of Insubria - expert in the assessment of chemical risk, to guarantee the independence of the evaluations performed.

**THE DOSSIER, DEVELOPED TO** clarify the possible risks for human health linked to ELT derived granules used in the realisation of artificial turfs fields, presents results that show that there is no health risk deriving from the use of such a material to make football fields surfaces (moreover a very widely spread activity at European and international level).



**IN FACT, THE ASSESSMENT**, developed on three different scenarios (risk from inhalation of volatile organic compounds and polycyclic aromatic hydrocarbons, metal risk in case of involuntary ingestion, skin exposure to metals released by artificial turfs), quantified the risk well below the limits defined by the responsible governmental bodies and that correspond to safety thresholds.

#### **Partnership with UISP, Unione Italiana Sport Per tutti (Italian union of sports for all)**

**ALWAYS IN THE FIELD** of sport applications Ecopneus strengthened its partnership with UISP, that represents a well-established organisation all over the national territory, thanks to its 1,267,000 members and 17,670 affiliated sport companies.

**THE COLLABORATION WITH UISP**, together with the attention shown toward environmental topics, allowed to successfully conclude a "Survey about ELT recovery products knowledge and use", that involved, in total, 781 among territorial sport associations' responsible persons, national managers, sport facilities managers.

## Sport surfaces and modified asphalts are among the most promising uses for ELT rubber powder

**ONE OF THE MOST** relevant aspects emerged from the survey is that of a high sensitivity to environmental themes, supported by a good availability to commit themselves to environment safeguard. Among the various topics related to environment respect, the survey examined in depth the recovery and recycle topics, in particular ELT rubber use in the realisation of sport surfaces, investigating interviewees' perception with regards to two different profiles: environmental benefits deriving from rubber recovery and the possible consequences of such applications on human health.

**INTERESTED PERSONS, ON THE** one hand, showed the certainty that using ELT recycling derived materials represents an environmental help and a concrete action to contrast waste dumping, while maintaining the same reliable performances of similar products manufactured with virgin materials. On the other hand, the perception of the absolute safety of surfaces realised with ELT rubber powder or granule emerged, also in case of impacts or abrasions.

**ONCE CONCLUDED THE SURVEY** and results elaboration phase, Ecopneus and UISP took care of some events to contribute to consolidate the certainty about the advantages of use and safety of these materials. On the occasion of two sport events - Vivicità in Florence of April 13<sup>th</sup> - 15<sup>th</sup>, and Bicincittà in Ferrara of May 11<sup>th</sup> - 13<sup>th</sup> - ELT rubber demonstrative installations were realised.

### **ELT powder use in road surfaces**

**ANOTHER RELEVANT AREA OF** rubber recovery promotion initiative is represented by road applications, i.e. the possibility to use ELT powder to make rubberized asphalts, whose high technical and environmental performance are documented in the sector scientific literature.



**IN FACT, RUBBER POWDER** can be used to produce modified asphalts. Surfaces obtained by adding ELT powder to bituminous mixes are highly appreciated due to their durability, noise reduction and braking adherence.

**THE TYRE ROLLING NOISE** reduction characteristic on road surface represents a key element, since the Legislative Decree 194/2005 gives Provinces the responsibility to define Action Plans aimed at interventions to mitigate noise, in those areas with noise above limits set by law. In fact, among different existing solutions, modified asphalts guarantee a good sound proofing at competitive costs with respect, for example, to road side barriers, representing less invasive interventions toward landscape safeguard.

**CAPITALISING THE EXPERIENCE MATURED** with the Bolzano Province, Ecopneus collaborated to the realisation of some technical seminars and workshops at the Consortium of Municipalities of the Trento Region in order to inform about rubberized surfaces potentials (see box).

#### Acoustic characteristics of rubberized asphalts

Among the most interesting Italian experiences in the field of rubberized asphalts are those carried out in the **Bolzano Autonomous Province**. After ascertaining the significant performance offered by this application, in particular the containment of noise emissions, rubberized asphalts were adopted in road surfaces, as traffic noise reduction measure, in a road segment between **Coldrano and Vezzano, in Val Venosta**. Such intervention had been predated by an in-depth **campaign of sound emissions measurement and monitoring**, financed by Ecopneus. Measurement tests allowed to verify how road surfaces made with rubberized asphalts offer advantages in terms of noise reduction, both with respect to traditional surfaces and other modified surfaces. Besides, powder surfaces represented a more advantageous alternative in economic terms too, with respect to traditional soundproofing barriers, that present the disadvantage of a higher landscape impact.

The good performance that can be offered by “rubberized” surfaces to solve traffic noise problems, pushed the Bolzano Autonomous Province to include such surfaces among the intervention tools to recover areas with a high “acoustic pollution”.

### Collaboration with Turin Politecnico

**IN ORDER TO SUPPORT** the research on this alternative use, that represents a relevant answer both in quantitative and qualitative terms to ELT rubber recycle, Ecopneus has since long time made a partnership with the Politecnico of Turin.

**IN THIS RESPECT, IN** 2012 the dossier “End-of-Life tyres use in road surfaces” was prepared, addressed to sector operators and technicians, which is contributing to spread the knowledge regarding the use of bituminous mixes containing ELT powder.

## Research and development: constant strong commitment for Ecopneus

**DURING 2012, THEN, ANOTHER** important project started together with Politecnico of Turin, called **Polipneus**, which develops into an articulated research programme. Polipneus project's aim is, from the one hand, to definitively consolidate the knowledge on rubberized asphalts performance and, on the other hand, to further develop such knowledge, deeply analysing topics still not satisfactorily examined by sector scientific literature.

**ALONG THE WHOLE RESEARCH** programme, study's activities are planned, both regarding the more consolidated “*wet*” technologies, and the less known “*dry*” technologies; particular attention is put on the assessment of aspects linked to potential emissions of bituminous conglomerates containing ELT rubber, with the aim of reducing such emissions.

**THE LAST AIM OF** the Project is to end up with the definition of Performance Technical Norms for both technologies (*wet* and *dry*), test and analysis protocols, technical reports which represent a satisfactory reference point on road applications ELT rubber

### Collaboration with Bologna University

**REGARDING THE RESEARCH ON** cold recycled mixes containing ELT powder, Ecopneus started a collaboration with the Civil Engineering,

Chemistry, Environmental and materials Departments of Bologna University, financing a yearly research with the objective to analyse the main mechanic characteristics of ELT powder mixes.

**THE RESEARCH RESULTS CARRIED** out at Bologna University, showed how ELT powder can be advantageously used in recycled or cold stabilised mixes, facilitating stress resistance when correctly dosed.

**THESE MIXES CAN REPRESENT** a valid alternative in road maintenance and new applications, offering guarantees both in terms of technical reliability, and in terms of environmental sustainability, linked to the use of recycled rubber instead of virgin rubber and to the use of mixes that thanks to conglomerates' low processing temperatures allow a significant emissions reduction.



### Inside CEN working groups for the definition of technical norms on ELT derived materials

**TO REMAIN IN THE** field of the promotion of ELT recycled materials uses, at last is worth notice Ecopneus' commitment in *CEN Technical Committee (European Committee for Standardization)* working groups, engaged in the elaboration of a norm specifying ELT derived materials characteristics.

**IN PARTICULAR, THE TC** is organised into four working groups respectively dedicated to physical properties standardisation, to chemical properties standardisation of ELT materials, to the validation of the norm CEN/TS 14243 and to the identification of new opportunities of using whole ELT, for example in engineering applications.

### Information and diffusion contribution

**THROUGH MANY SEMINARS**, Ecopneus is committed to offer a contribution to the "recycle culture" and thus to the affirmation of its products, with the aim to contribute to the scientific discussion and the diffusion of environmental themes.

**AMONG THE MAIN EVENTS** of 2012 we can make reference to some of them with international relevance: the worldwide congress of solid waste management organised by ISWA (**International Solid Waste Association**); **Ecomondo**, International Fair of Material and Energy Recovery and Sustainable Development, annually organised in Rimini; Fair of the remediation techniques of contaminated sites (**Remtech**), annually organised in Ferrara.

### Green Public Procurement

**BESIDES THESE PARTICIPATIONS, IN** a constant commitment on the domestic territory, Ecopneus took part in information and training activities about the possibilities offered by the Green Public Procurement in different municipalities, as better reported in the chapter dedicated to institutional relationships (see page 32).

**THE GREEN PUBLIC PROCUREMENT** seeks to make the public administrations' purchases "green", introducing ecological criteria in purchasing procedures by Public Administration. Italy, complying with an obligation set forth by European norm, approved the National Action Plan for GPP in April 2008 and is now approving the Minimal Environmental Criteria for different product categories - among which is the construction and maintenance of roads and buildings, in order to be able to classify them as "green".



## **Social sustainability**





# Social Sustainability

## Local and global community

### Legality promotion, waste management and recovery

**ALTHOUGH IT IS NOT** possible to provide measurement indicators on the effects of Ecopneus activity about legality principles' diffusion yet, it is important to report the quantitative effort put in this direction.

**NO DOUBT THIS IS** one of the most significant impacts generated on the community in terms of social sustainability, with a constant commitment toward the diffusion of legality in waste management and recovery.

**GENERATED IMPACTS GO WELL** beyond social area, regarding also environmental and economic sustainability, as synthesised in the following table:

**Table 11** - Direct and indirect impacts of legality principles promotion



#### Social impacts

public health safeguard  
future generations safeguard  
territory safeguard, a common public goods  
promotion of a culture based on reciprocal respect and compliance to the laws



#### Economic impacts

creation of new market opportunities  
recovery of black unofficial economies  
efficient monitoring of sector flows  
reduction of illegal traffics toward foreign countries



#### Environmental impacts

direct risks reduction (i.e. old stocks burning)  
elimination of landscape disfigurement

### Agreement with the Customs Agency

**IN THE FRAME OF** legality principles promotion, and to complete Ecopneus *networking* effort with regards to Institutions and public Administrations, in June 2012 an agreement with **Customs Agency** was signed.

**THE MEMORANDUM OF UNDERSTANDING**, called “**End-of-life tyres cross-border movement**”, foresees a direct commitment of the limited consortium as technical partner, with the aim to monitor the flows related to ELT international trade. In particular, the following are the activities set forth by the agreement:

- ▶ Combined organisation of training activities for the agency’s personnel, regarding ELT and derived wastes commercial trade;
- ▶ Agency commitment to distribute informative material prepared by Ecopneus about the correct ELT and derived wastes management and recovery;
- ▶ Two-ways information exchange to monitor the international trade flows related to the specific goods’ sector in order to control the respect of the ELT and derived wastes national and international regulation in place;
- ▶ Ecopneus will make available its own IT information necessary for possible controls and inspections on cross-border movements under its competence;
- ▶ Ecopneus will provide free of charge - as far as possible - technical assistance to the agency central and peripheral structures, regarding the prevention and suppression of illegal actions under Customs’ area, also by means of consultants reports and laboratory analyses.

### The dossier “Copertone Selvaggio” (wild tyre) with Legambiente: the Country’s picture and monitoring

**STARTED IN 2010**, **THE** collaboration with Legambiente continues with yearly in-depth analyses and updating of the “**Copertone Selvaggio**” dossier, which is collecting through time important data on a phenomenon which regards our Country from North to South, that one of uncontrolled and illegal ELT dumping.

**IN THE PAST DECADES**, this situation was linked to the lack of an ELT management national system, today this is due to the flows of still existing illegal tyre sales (in black), with the effect of the abandonment of the same ELT quantities into the environment.

**THE WORK DONE WITH** Legambiente represents a sensibilising and information tool toward citizens and at the service of institutions, to

intervene and contrast this behaviour which steals precious materials to the correct management and recovery.

**THE DOSSIER BELONGS TO** the annual Ecomafie Dossier of Legambiente and is published on Ecopneus website.

## ELT collection from old stocks

**AS ANTICIPATED IN THE** previous paragraph, all over the national territory can be found numerous site where are laying abandoned ELT, also due to controversies and bankruptcies of the companies that were in charge of their recovery.

**THESE SITES ARE LIKE** wounds of the territory deserving a prompt solution, to avoid possible threats for the environment and human health. In fact, inside an uncontrolled ELT deposit, the risk of fire with the generation of noxious emissions is high; besides, these are favourable places for insects and animals which cause degradation, bringing potential risks for public health.

**THIS REFERS TO ACCUMULATIONS** created in the past decades, before the definition and start of a national ELT collection system, which today addresses to the correct recovery every legally sold tyre in Italy.



**SUCH SITUATIONS FALL OUTSIDE** the responsibility scope defined by the Decree 82/2011, thus representing a problem difficult to solve for the Public Administration, due to the large use of resources necessary to their removal.

### From an efficient management resources to territory's benefit, from Northern to Southern Italy

**THE EFFECTIVE AND EFFICIENT** management of resources derived from the collected environmental fee by Ecopneus allowed to start an important intervention activity in such situations, in 2012 allocating to relevant projects of collection from old stocks, 30% of management surplus of previous year's ordinary activity.

Map of management interventions from previous year ordinary activity



**ACTIONS OF EXTRAORDINARY COLLECTIONS** from old stocks were as well carried out to complete the collection target defined for the year.

**DURING 2012, ECOPNEUS CONCLUDED** 4 collection operations from old stocks, two of which (carried out at the sites in Olbia and Oristano) were carried out thanks to the 2011 management surplus, while those carried out at Ferrara and Buccino participated to target achievement, so belonging to the Company ordinary management. The four sites (Ferrara, Oristano, Olbia, and Buccino) had a common characteristic, that of huge ELT abandoned quantities due to the bankrupt of companies in charge of their recovery.

## Illegality fight and environment safeguard

**IN THE CASE OF** Oristano site, a further alarm element was represented by the site's location, not strictly industrial but, on the contrary, nearby a wet area of international relevance, protected by the Ramsar act (intergovernmental act having as object the protection of natural ecosystems).

**IN MARCH 2012 WERE** completed the removal operations, already started in 2011, of the over 7 thousands ELT tons lying in the Via Ca' Rosa site in Ferrara; it was also involved in August 2011, by a fire originated in the nearby Unirecuperi's headquarter, that threatened also ELT piling. In June 2012, started the collection operations from the Oristano site, concluded in October 2012, where 3,000 ELT tons were accumulated. Eventually, in November 2012, started the collections from Olbia and Buccino (SA) sites, respectively with old stocks of 800 and 3,200 ELT tons. The most demanding collection of the two, given the considered quantities, the Buccino one, was carried out very quickly, assuring its completion within December 2012.

### 2012 operations numbers

**TO CARRY OUT ALL** these interventions Ecopneus took advantage of its suppliers' capillary network, involving from time to time the nearest companies to storage sites.

**COLLECTED ELT WERE MAINLY** sent to energy recovery, considering the very bad conditions after havin been abandoned for years to

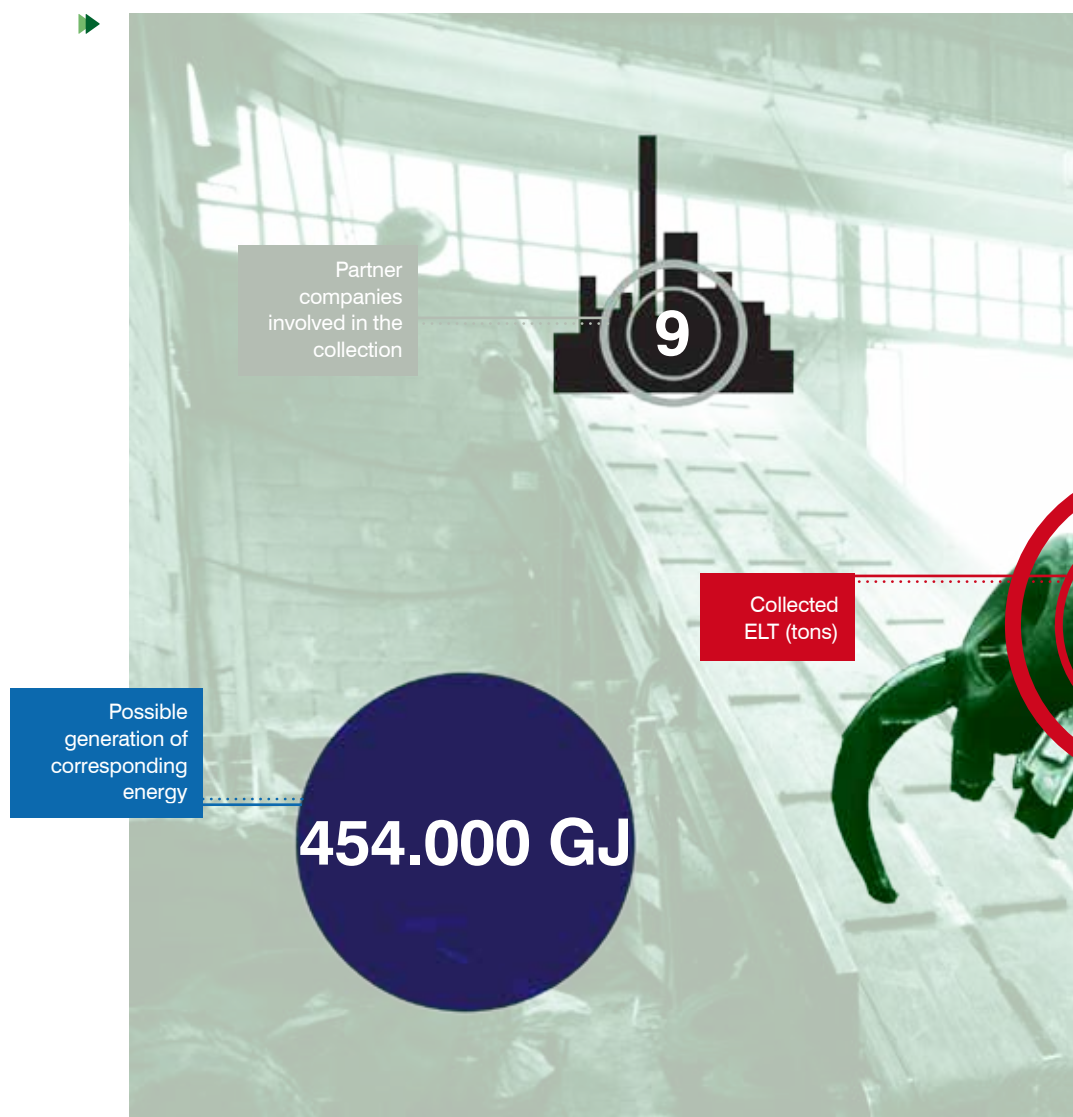
weather conditions. Lower quantities, in better conditions, could be used for material recovery.

**LOOKING AT THE NUMBERS** of total balance of collection operations from old stocks we find numbers giving an idea of the overall size of operations performed: over 14,200 ELT tons, about 900 “missions”, and 9 partner companies involved in collections.

### A social, environmental, and economic benefit for the community

**THE COMMUNITY’S BENEFIT GENERATED** by such a huge organisational effort, can be even better represented looking at two key data: supported costs and energy production possibly deriving from ELT recovery.

**Table 12** - Collection operations balance



**ELT HAVE A CALORIFIC** power equivalent to that of a good quality pet coke (32 GJ/tons)<sup>15</sup>. This means that, correctly recovered, they can substitute primary energy sources in high energy-consuming plants. The 14,200 ELT tons collected from old stocks can generate over 454,400 GJ energy, roughly equivalent to 10,853 OET (oil equivalent tons).

**Note 15** - Source: World Business Council on Sustainable Development (WBCSD), 2005 - CO2 Emissions Factors of Fuels.

**AS FAR AS COSTS** are concerned, collection operations required the use of resources amounting to over 1.5 million Euro to cover costs. This amount, partly covered thanks to the previous year management surplus, and therefore thanks to Ecopneus model's efficacy, would have fallen on administrations expenses, with the need of support long procedures way to ascertain responsibilities.



FINALLY, A LAST DATUM can be quoted to represent the avoided risk thanks to collections from old stocks. ELT uncontrolled combustion represent the source of gases noxious to human health and the environment. The over 14,200 ELT tons could have generated, for example, 497,000 kg of carbon monoxide.

## Other projects

### [www.ecopneus.it](http://www.ecopneus.it), information window on regulation aspects

**Table 13** - Smokes compositions of uncontrolled ELT burning

PROMOTION ACTIVITIES OF ECOPNEUS's legality principles are addressed not only to the whole community, but specifically to the supply chain's operators as well, with a constant information effort - formal

Component	Smokes concentrations <sup>16</sup> (g/kg burned ELT)
CO <sub>2</sub>	1.450
CO	35
N <sub>2</sub> O	0,9
NO	3,2
SO <sub>2</sub>	15
HCN	4
HCl	-
UNBURNED HYDROCARBONS (Benzene, Toluene, etc)	23
POWDERS	285
METALS (including Al e Zn)	31,9
IPA	0,0633
PCB	2,66 x 10 <sup>-04</sup>
DIOXINES/FURANS	6,44 x 10 <sup>-07</sup>

**Note 16** - Source: SNCR, 2007.

and informal - about the norms in force. In this case, the section dedicated to an updated regulations list for experts inside Ecopneus's website represents the main and most visited ELT documents and information container in Italy.

### **“Second chance”, wastes’ future inside good practice of the past**

**A BOOK WRITTEN BY** Ecopneus General Manager together with Quintino Protopapa, journalist and writer with a long experience about sustainability themes, facing the topic of the correct waste management in the present society, starting from the virtuous behaviours and practices which substantially cancelled the problem in past society, and that today, combining with modern and advanced treatment technologies and techniques, can still represent a value and an incentive for citizens, companies, and institutions.

**PUBLISHED BY EDIZIONI AMBIENTE**, the book was presented during Ecomondo 2012 and spread among Ecopneus's stakeholders, during following events.



### The educational project for secondary schools

**IN THE AREA OF** collaboration with Legambiente, in 2012 an educational project for secondary schools, first grade, for school year 2012-2013 was promoted. The project is entitled “**The correct end-of-life tyres recovery**”, and proposes a path throughout the entire rubber lifecycle, starting from natural rubber in rubber forests, to arrive at end-of-life tyres recovery and recycle.

**THE PROJECT FORESEES BOTH** multimedia activities on the internet, and educational materials’ use with printable graphic cards. ([www.legambientescuolaformazione.it/documenti/2012/Progetti/Ecopneus.php](http://www.legambientescuolaformazione.it/documenti/2012/Progetti/Ecopneus.php)).

## To make environmental culture to support the Country’s development

### Social promotional project for boys of “the other Naples”

**STARTED IN 2012, AND** under realisation during 2013, the project started together with the Onlus “The other Naples” will lead to the creation of a multifunctional sport field made with ELT rubber.

**ECOPNEUS HAS DIRECTED THE** project with the activation and involvement of the necessary competences for its realisation at the Monumental S. Nicola da Tolentino complex, destined to socially disadvantaged boys of the city.

### Antitrust and competition safeguard

**THE FULL AND COMPLETE** respect of all reference norms regarding the competition safeguard is considered by Ecopneus as a fundamental one since its foundation, and has translated into documents and procedures covering today all Company’s sensitive fields regarding the subject matter, basically attributable to:

- ▶ Internal relationship among shareholders;
- ▶ Ecopneus position with reference to waste management sector.

**INSIDE THE CODE OF** Ethics specific recalls to antitrust law's respect and to loyal competition were already inserted. Such principles are more widely considered and translated into management procedures of internal and external activities.

### **Relationship with the Administrators and Ecopneus management:**

**SUBSCRIBED BY THE ADMINISTRATORS**, the “Auto regulation conduct code of Ecopneus scpa Administrators” contains relevant indications in terms of competition, because it foresees the obligation to avoid any exchange of confidential information, which could be relevant for market strategies.

**THE CHOICE TO ASSIGN** a high level of autonomy and independence to the General Manager , responsible for all Ecopneus' management activities, and to the management of the same Company, with internal information access by Administrators, limited to synthesis data - by means of an ad hoc BoD deliberation - is related to the above mentioned code.



**SUCH INFORMATION FLOW IS** obtained also by means of monthly reports, through which the General Manager supplies Administrators with all necessary information to an adequate control of developed activities, avoiding being in conflict with the full compliance to the free competition norms.

**ON THE BASIS OF** this autonomy, Ecopneus operates with the utmost transparency with respect to activities and resources use, supplying the Ministry for the Environment, Land and Sea with the related reporting.

### Relationship with ELT management sector

**ANOTHER IMPORTANT AREA IN** which Ecopneus operated with a great attention and wisdom is that related to its position as main subject operating in the ELT management sector in Italy.

**IN THIS AREA THE** work done for ELT treatment of partner companies was the definition of precise tools and modalities:

- ▶ Support tools for selection managed by external specialised and certified subject;
- ▶ Transparent and non-discriminating procedures;
- ▶ Assignment and contracts duration that guarantee the best market coverage, with two-year period tenders.

**DOCUMENTATION, TOOLS, AND PROCEDURES** described so far will be revised and updated over time whenever necessary, to promptly answer to Ecopneus reality.

## Human capital

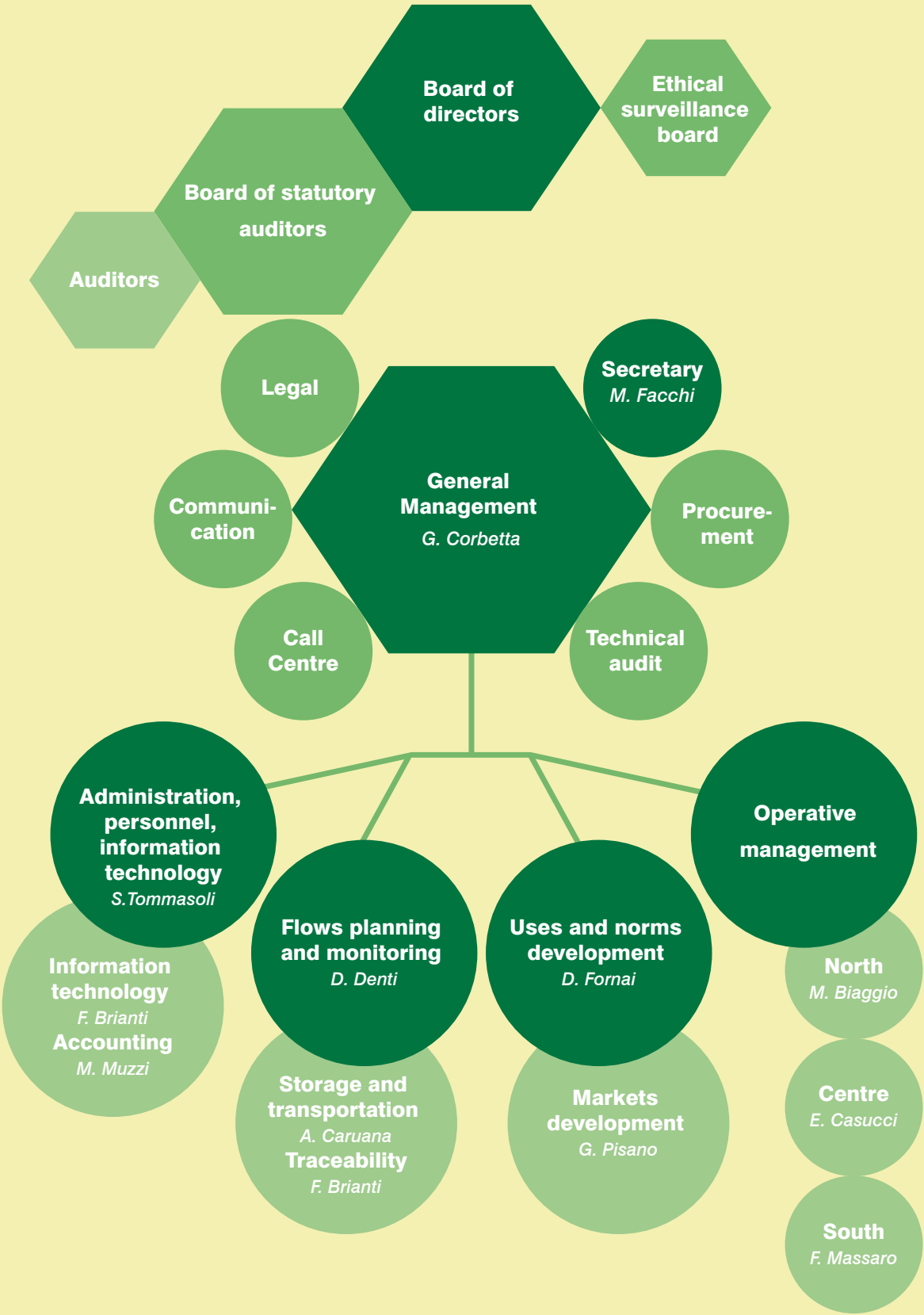
**ALTHOUGH THE NUMBER OF** Ecopneus direct employees does not make relevant the elaborated analyses, it is important to underline how human capital represents for the Company itself the first precious resource on which are based the obtained results.

**THE TEAM, MOSTLY YOUNG** and highly specialised, consolidated during 2012. In particular, personnel is subdivided as follows:

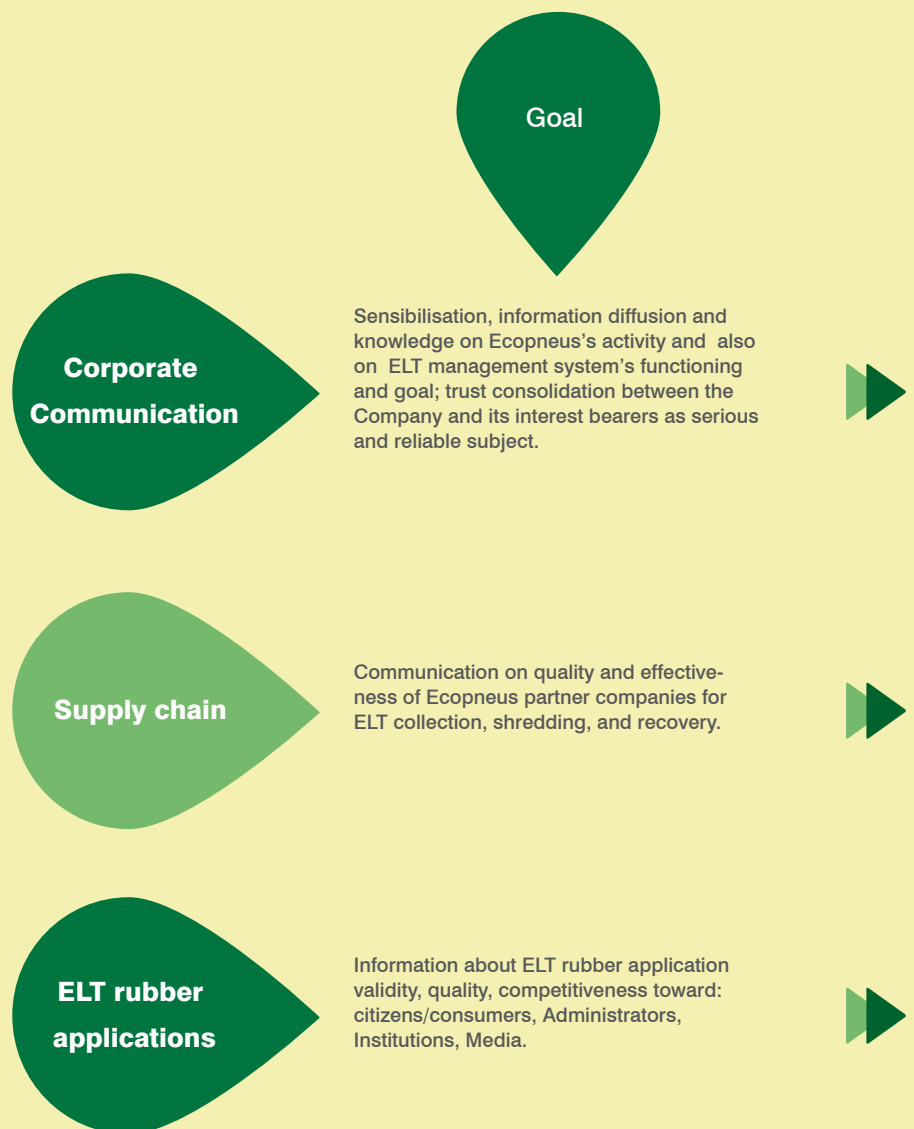
Reference  
period:  
2011/2012



Work organisation among Ecopneus personnel  
is structured according to the following organisational chart:



## Communication and transparency



**ECOPNEUS' COMMUNICATION ACTIVITIES IN 2012** covered three main areas, as described in the scheme below:

### Communication activity 2012

- Information plan on collections from old stocks, with an immediate positive impact perceivable by citizens and local institutions of reference;
- **ADV 2012** campaign "End-of-life tyres value goes beyond what can be seen", a qualification of the job done by Ecopneus and its suppliers in the supply chain;
- The meeting in Rome "**Illegality fight, environment safeguard and new markets**", held on June 6<sup>th</sup>, covering various topics, among which:
  - Sustainability Report 2011 presentation;
  - Subscription of the agreement with Customs Agency;
  - Presentation of the illegality maps, prepared in collaboration with Legambiente, regarding the distribution of illegal ELT dumping in Italy from 2005 to 2012;
  - The announcement of past Ministry of the Environment Corrado Clini, of the start of collection operations from old stock in Oristano.
- Project "**Open plants**" (May-September), at three partner plants: Corgom in Corato (BA), Steca in Fermo, and Tritogom in Cherasco (CN). Over 200 participants took part at the events, with a press coverage of 30 articles in online newspapers, magazines, newspapers, and 5 television services. An ad hoc website was created for the event, with over 8,500 visits in 7 months.
- **Ecomondo Fair 2012**, with a booth with dedicated space for partner companies, for their public relations and contacts. A workshop covered the topics linked to the development and consolidation of ELT rubber applications' market.
- Participation to other fairs and events, such as: Fiera Agricola, Verona; Greening Camp, Roma; Streetball, Milano; Remtech Expo, Ferrara; ISO TC 45, Riccione; ISWA, Firenze; Asphalt Rubber Conference, Monaco; Asphaltica, Padova; Modified Asphalts: a project for Trentino, Trento e Bolzano.
- "**ROADS**" sector: timely information to public opinion to spread the knowledge about powder rubber asphalts properties. Among the main activities are:
  - **Workshop of June 6<sup>th</sup>**, presentation of Mark Belshe, President of the Rubber Pavements Association, a US no-profit association promoting since 1985 the highest possible use of ELT rubberised asphalts.
  - **Asphaltica**, the most important Italian Fair dedicated to roads construction and maintenance, held in Monaco, where Ecopneus was Gold Sponsor.
  - **Asphalt Rubber Conference**, main worldwide event held in Monaco on ELT rubberized asphalts, where Ecopneus was a Gold Sponsor together with ELT responsible managers in Spain and Portugal.
  - **Technical workshops** and seminars in Trento, organised with the Consortium of Trentino Municipalities, to provide mountain communities with tools for this application.
  - **Video about asphalts** with Prisca Taruffi, rally former-champion, who tested on the road modified asphalts' characteristics, under rain as well, challenging their adherence, braking space, and noise. The video was transmitted on Rai 2 during the programme Easy Rider.
- "**SPORT**" sector. Promotional activities were:
  - **UISP agreement** to realise a survey to assess the knowledge by sport world about recycle in general and on ELT derived materials use.
  - **Streetball Italian Tour 2012** sponsoring, organised by Italian Basket Federation, formed by 5 competitions' itinerant stop-overs on field realised with ELT recovered rubber.
  - **Presentation of artificial turfs fields dossier**, for a correct information about their safe use in these structures.



**Web communication:****[www.ecopneus.it](http://www.ecopneus.it)**

**IN PARALLEL WITH THE** communication plan described, during 2012 the institutional website consolidated, as a reference point for partner companies about the consortium's activity, and as a primary information source about End-of-Life Tyres world in Italy.

**ECOPNEUS WEBSITE, WITH AN** average of about 500 daily visits and almost 900,000 contacts in 2012, represents the main and most visited ELT documents and information container in Italy

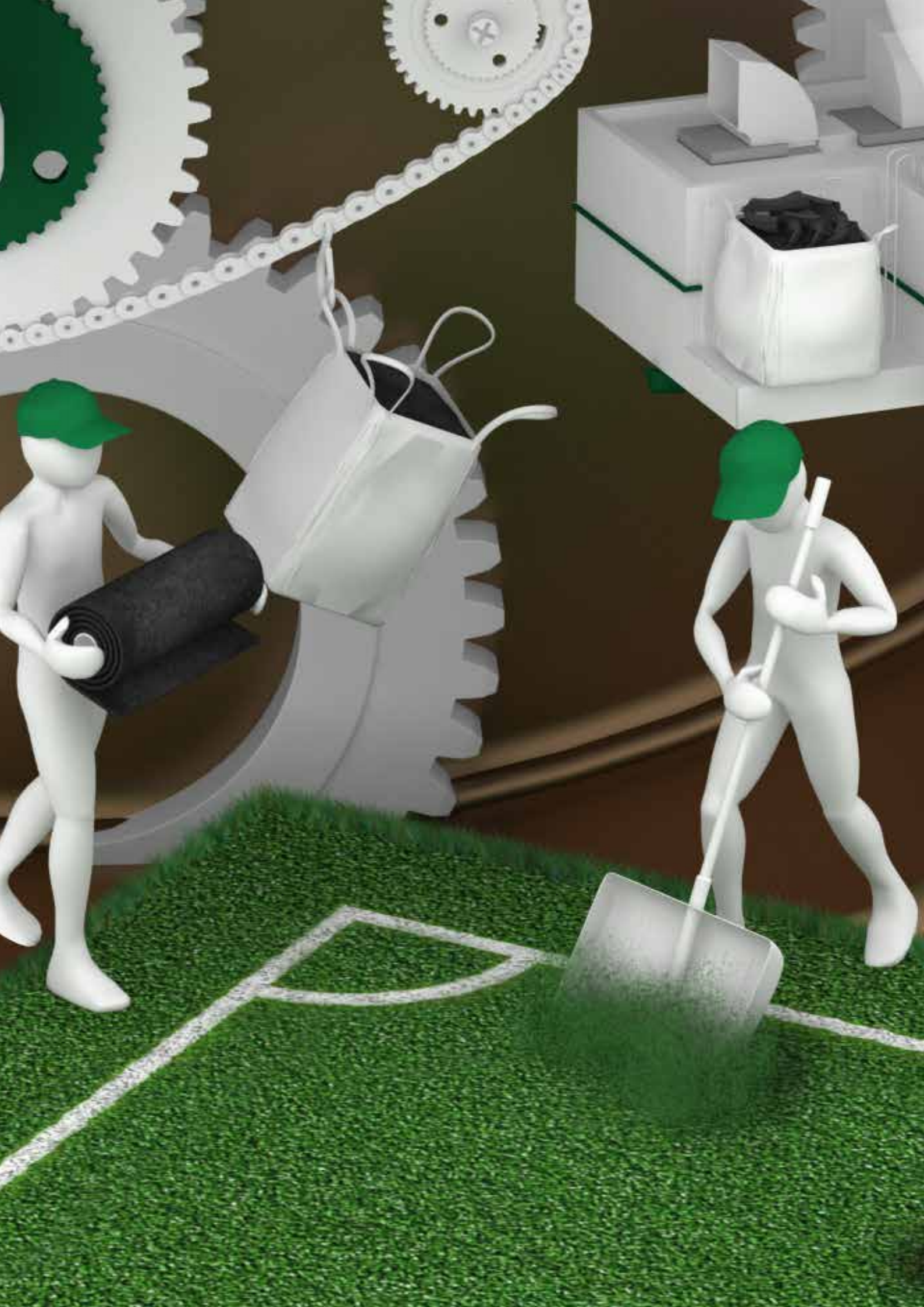
**INSIDE THE WEBSITE, IN** 2012 a subsection was created, to promote **ELT rubber products** - the Products Catalogue - containing about 180 different products of 30 different Italian companies.

Information and  
sensibilisation  
to build a  
recycling society

**Relationship with media**

**HERE FOLLOWING ARE THE** relevant numbers of the 2012 Press office activities:

- ▶ 769 journalists involved, of which 307 national and 462 joined for local events;
- ▶ 692 issues as: newspapers (79), online newspapers(486), magazines (96), radio (11), television (20);
- ▶ Over 70 million estimated contacts;
- ▶ 5 participations to television programmes in collaboration with RAI.



**Commitment  
for the future**





# Commitment for the future

**ALBEIT 2012 REPRESENTED A** crucial year to test the entire Ecopneus system, 2013 will need further management and operative optimisations that will also take into account the results of operators' tender carried out during 2012, and effective starting from 2013.

**FROM AN OVERALL STANDPOINT,** the short and medium term's commitment remains that of a continuous improvement, in a perspective of sustainability and service to the local and global community; here follow some macro-objectives defined at managerial level. In particular, commitments are divided according to three areas:

- ▶ Goals referred to the company's strategic plan;
- ▶ Goals more strictly linked to the company's activity;
- ▶ Reporting and *accountability* goals.

#### Strategy commitments

Medium terms priority goals:

- ▶ **maintenance of an elevated and stable service level to the replacement market;**
- ▶ **balance between ELT flows sent to energy and to material recovery, with reduced foreign dependence;**
- ▶ **support to ELT rubber uses' development in Italy.**

Such goals will necessarily be reconsidered in a wider scheme of constant and renewed attention by administrators to the respect of auto-regulation codes in the area of antitrust, confirming in such a way the managers' management autonomy and their auto-limitation to get operational details.

#### Core business commitments

Applications development after collection:

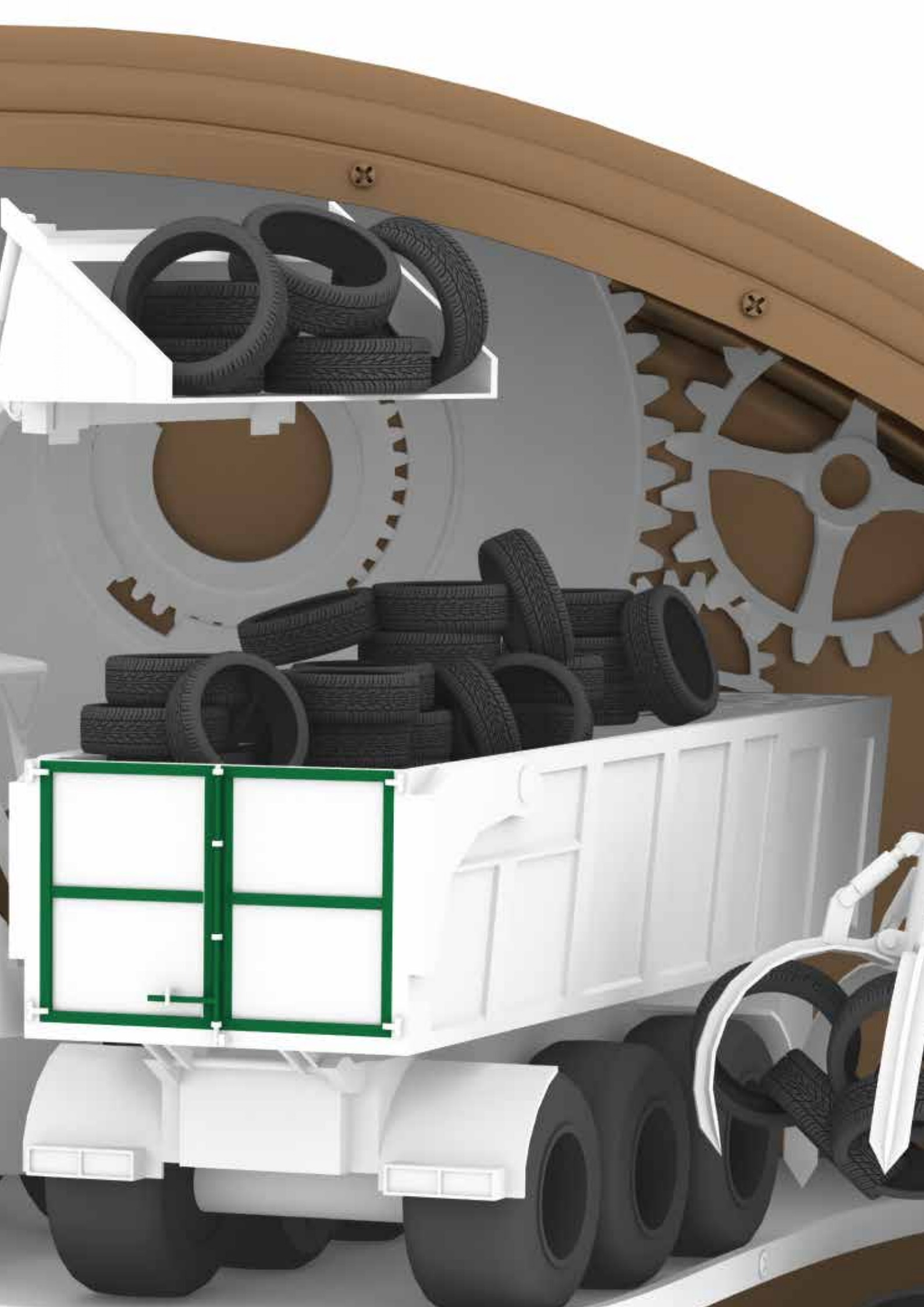
- ▶ research and development activities promotion;
- ▶ stimulate new and innovative market operators;
- ▶ build and strengthen partnerships in end sectors;
- ▶ build and strengthen partnerships with public subjects, in particular to favour Green Public Procurement use.

#### Accountability commitments

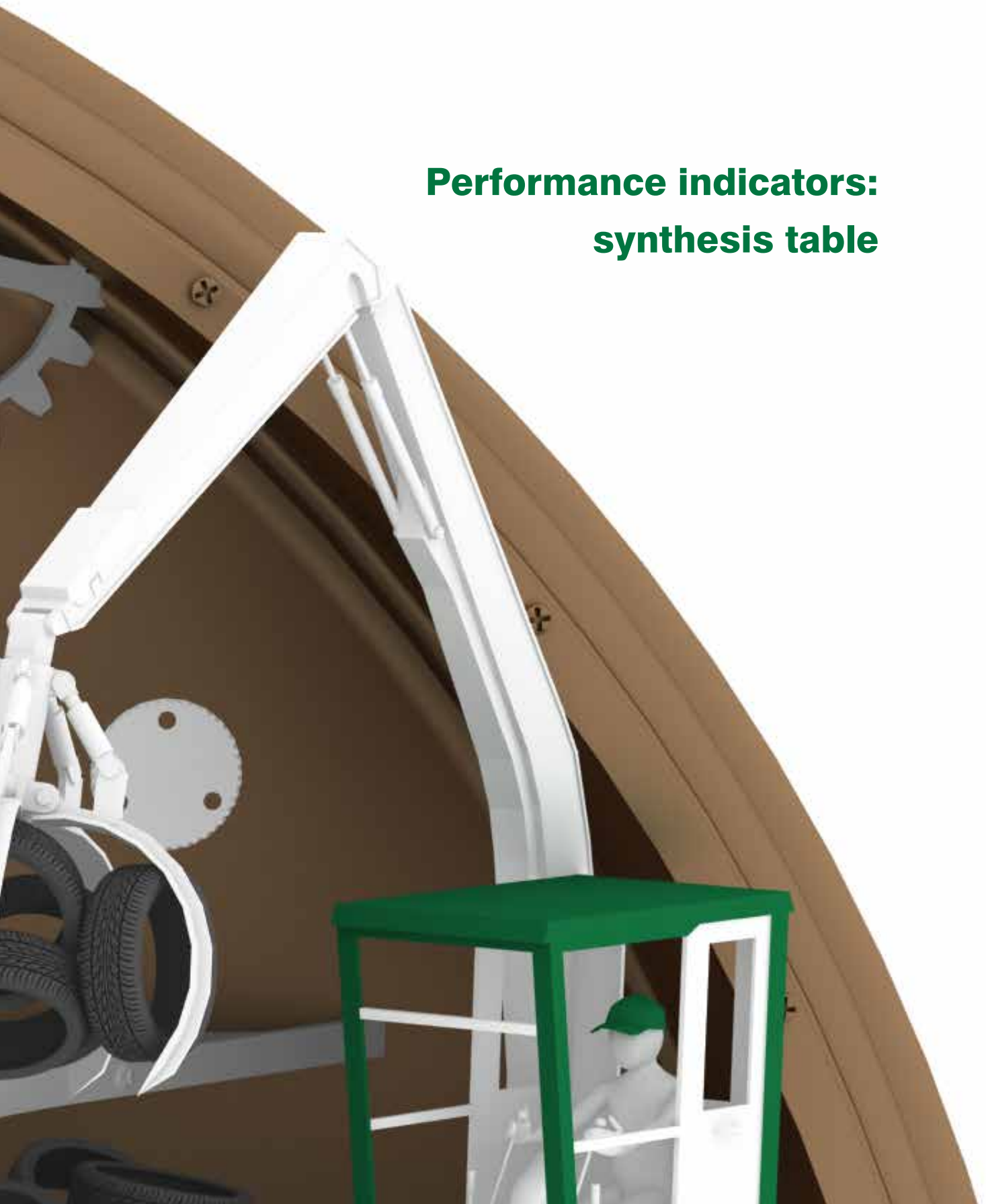
As far as the adopted *accountability* system is concerned - i.e. those tools allowing Ecopneus to be accountable for its own activities, respecting the commitments taken and the generated expectations toward stakeholders, in terms of sustainability and shared value - the path toward the system's improvement and optimisation continues. In particular, during 2013 the following activities are foreseen:

- ▶ **extension of the reporting area beyond company's borders, with the measurement of some indicators directly linked to the supply chain's operators;**
- ▶ **identification of measurement and monitoring method of generated network activities;**
- ▶ **calculation completion and use of values related to core GRI indicators considered to be relevant for the Company;**
- ▶ **more detailed measurement of direct and indirect impacts generated by Ecopneus system;**
- ▶ **identification of involvement tools and stakeholders mapping.**





## **Performance indicators: synthesis table**



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# Performance indicators: synthesis table

**FOLLOWING, SOME SUMMARY TABLES**, containing the main numerical indicators used to prepare this Report. In particular, data are subdivided with respect to the three categories of performance used to measure business impacts: economic, environmental, and finally, social.

**IN SOME CASES REFERENCE** is directly made to the international standard of the Global Reporting Initiative, as indicated by the related code reported in the table; in other cases the indicator must be considered related to Ecopneus's specific activity.

**IT MUST BE REMEMBERED** that 2011 numerical data consider the real Ecopneus system's operativity, reporting a period from September 7<sup>th</sup> to December 31<sup>st</sup>, 2011. 2012 values are instead related to the entire calendar year.

**Table 14 - Economic  
Performance Indicators**



Indicator	2011 value Sep 7 <sup>th</sup> - Dec 31 <sup>st</sup>	2012 value	GRI code
Partners	37	60	-
Directly generated economic value - total production value	28.121.192	81.013.015	EC1
Directly distributed economic value - total production costs	24.279.505	76.717.219	EC1
Directly distributed economic value - total taxes on net income	3.749.076	3.919.272	EC1
Net income	2.532.079	2.652.826	-
Relevant financing received from PA	0	0	EC4
Analysis and description of the main indirect economic impacts considering generated effects	n.a.	see specific analysed cases on page 72	EC9

**Table 15 - Environmental  
Performance Indicators**



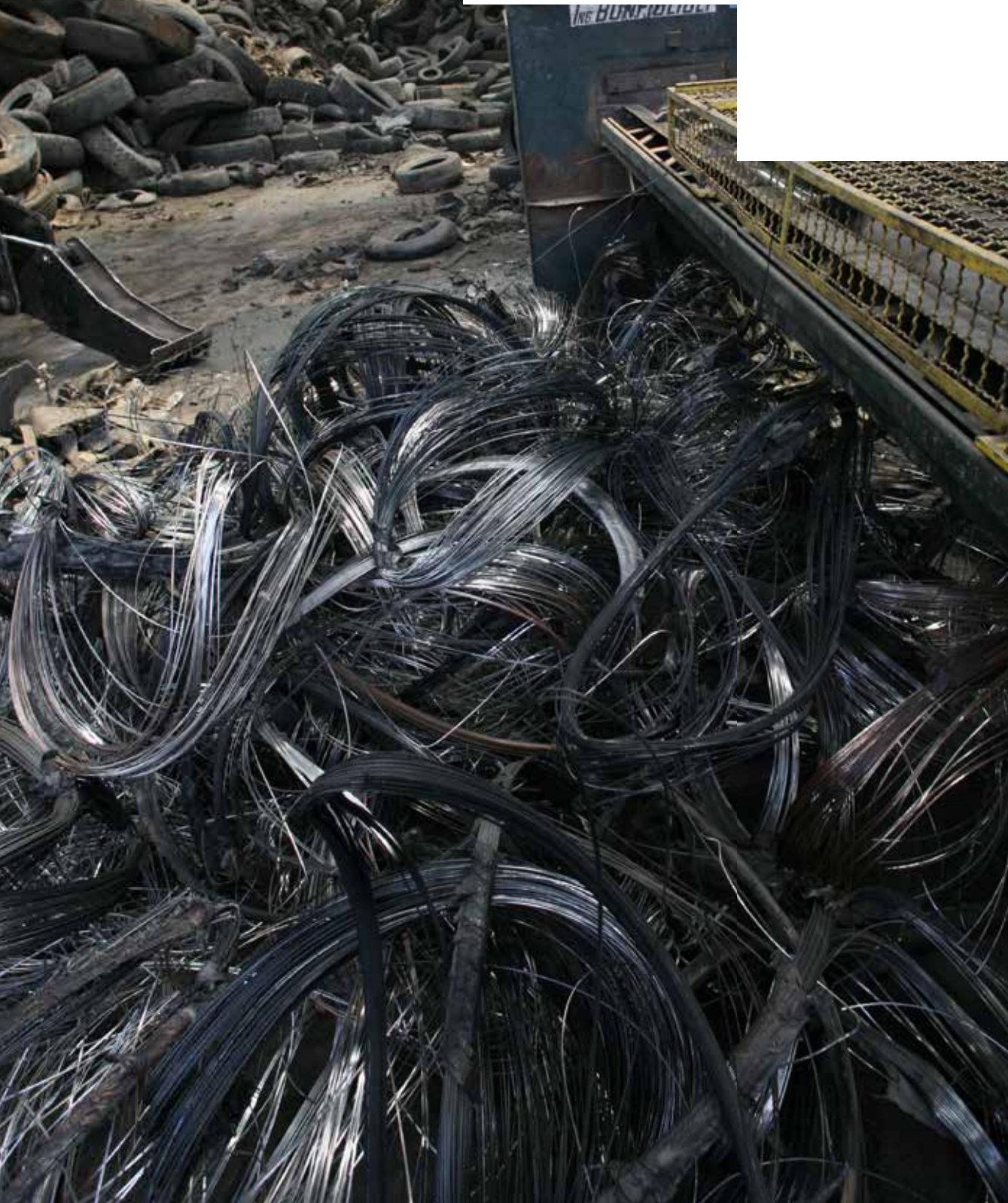
Indicator	2011 value Sep 7 <sup>th</sup> - Dec 31 <sup>st</sup>	2012 value	Possible GRI code
Monetary value of relevant fines and number of non-monetary penalties due to non-compliance with environmental norms and laws	0	0	
ELT tons collected and treated	72.468	240.208	
ELT generation points served	over 21.000	30.108	
Supply chain operators	16 main logistic contractor companies 24 shredding and recovery of material companies	15 main logistic contractor companies 27 shredding and recovery of material companies	
Distribution between material recovery and energy recovery	energy recovery = 63% material recovery = 37%	energy recovery = 63% material recovery = 37%	
Number of missions done by vehicles	21.500	77.897	
Average Km/tons from CC to SC	n.d.	27,05	
Average weight/mission by load area	4,75	4,65	
Average weight/mission by manual collection	4,72	3,16	
Material recovery uses	n.d.	Sport 34% Products 15% Mix 8% Acoustics 7% Other 3% Traders 33%	
Average Km/lt for ELT transportation	n.d.	2.82	
Incidence of euro 5 vehicles on total fleet	n.d.	27%	

Table 16 - Social Performance

Indicators



Indicator	2011 value Sep 7 <sup>th</sup> - Dec 31 <sup>st</sup>	2012 value	GRI code
Total number of employees	12, out of which 9 men	12, out of which 9 men	LA1
Total numbers and new hiring and personnel turnover rates	8 newly employed	0	LA2
Re-entry rate after parental leave, by gender.	0	1 woman	LA15
Work incidents rate	0	0	LA7
Composition of governing Company's organs	6 BoD Members, men  1 General Manager, man 5 components Board of statutory auditors [3 in forces, 2 temporary, men]	6 BoD Members, men  1 General Manager, man 5 components Board of statutory auditors [3 in forces, 2 temporary, men]	LA13
ELT cleaned surface - collections from old stocks/costs	nd	1.522.613 euro	-



# Acronymslist

ACI -	Automobile Club d'Italia
AL -	Aluminium
BPC -	Bi-phenyl-polychloride
CC -	Collection Centres
CO -	Carbon Monoxide
CO <sub>2</sub> -	Carbon Dioxide
CSR -	Corporate Social Responsibility
ELT -	End of Life Tyres
GRI -	Global Reporting Initiative
HCN -	Cyanide Acid
HCl -	Chloridric Acid
LCA -	Life Cycle Assessment
MEC -	Minimum Environmental Criteria
MELS-	Ministry of the Environment, Land and Sea
NO -	Nitrogen Monoxide
NOx -	Nitrose Oxide
PHA -	Polycyclic Aromatic Hydrocarbons
SC -	Shredding Centres
SO <sub>2</sub> -	Sulphurous Anhydride
SRM -	Secondary Raw Materials
UISP-	Unione Italiana Sport per tutti
UT -	Used Tyres
ZN -	Zinc

[illegible]





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