



ETRMA

ANNUAL REPORT

2013/2014



ETRMA MEMBERS

TYRE CORPORATE



www.vredestein.com



www.bridgestone.eu



www.conti-online.com



www.coopertire.com



www.goodyear.com



www.hankooktire-eu.com



www.marangoni.com



www.michelin.com



www.mitas.cz



www.nokiantyres.com



www.pirellityre.com



www.trelleborg.com

NATIONAL ASSOCIATIONS



BELGIUM www.federplast.be



FINLAND www.kumiteollisuus.fi



FRANCE www.lecaoutchouc.com



GERMANY www.wdk.de



ITALY
www.federazionegommaplastica.it



THE NETHERLANDS
www.vereniging-nvr.nl



SPAIN www.consorciocaucho.es

AFFILIATED MEMBERS



Tyre Corporate - BRISA
www.brisa.com



National Association - UK: BTMA
www.btmak.com



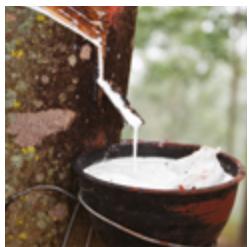
Hungarian Tire Association
www.hta.org.hu/



Polish Tyre Industry Association
www.pzpo.org.pl

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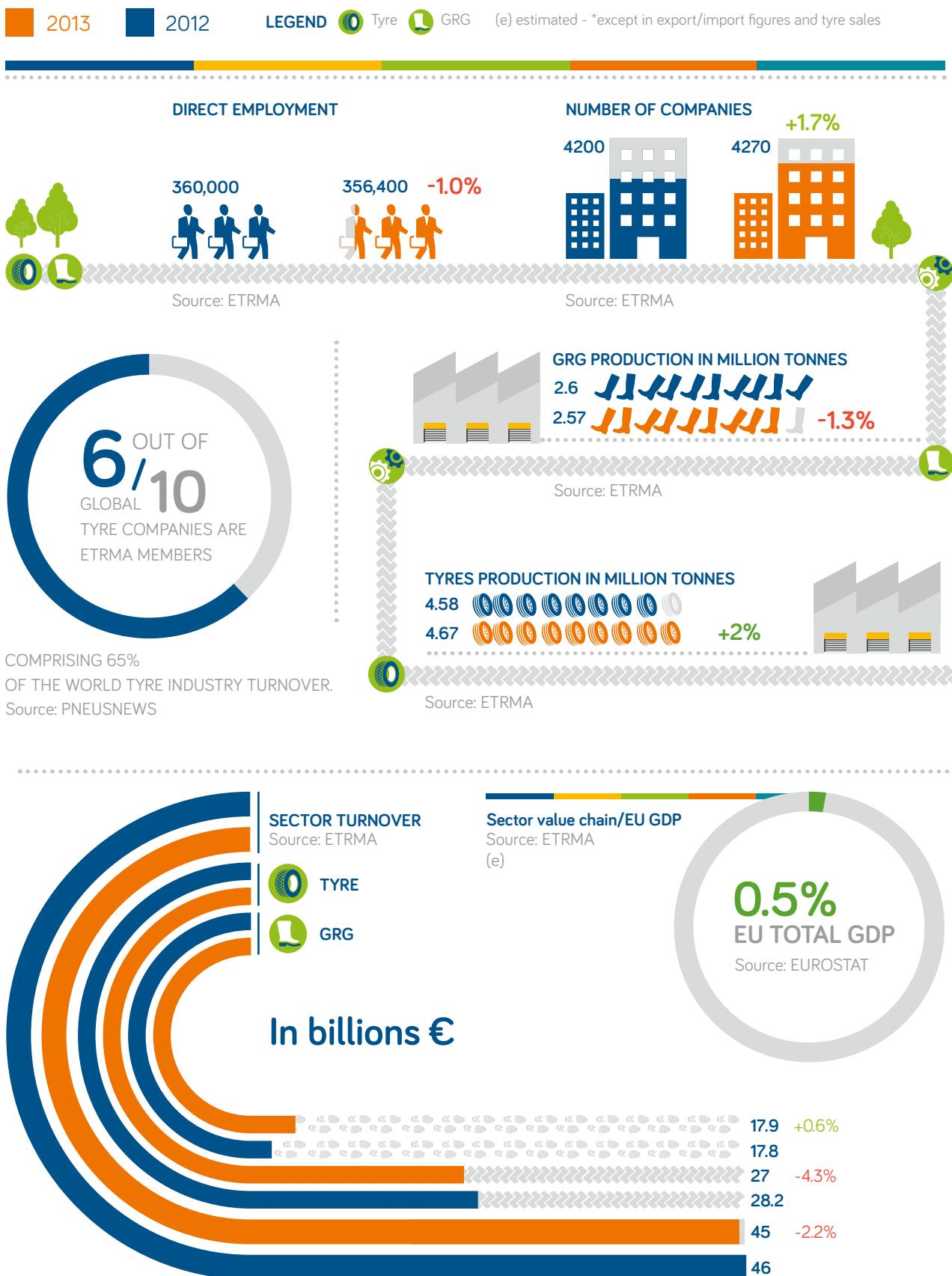
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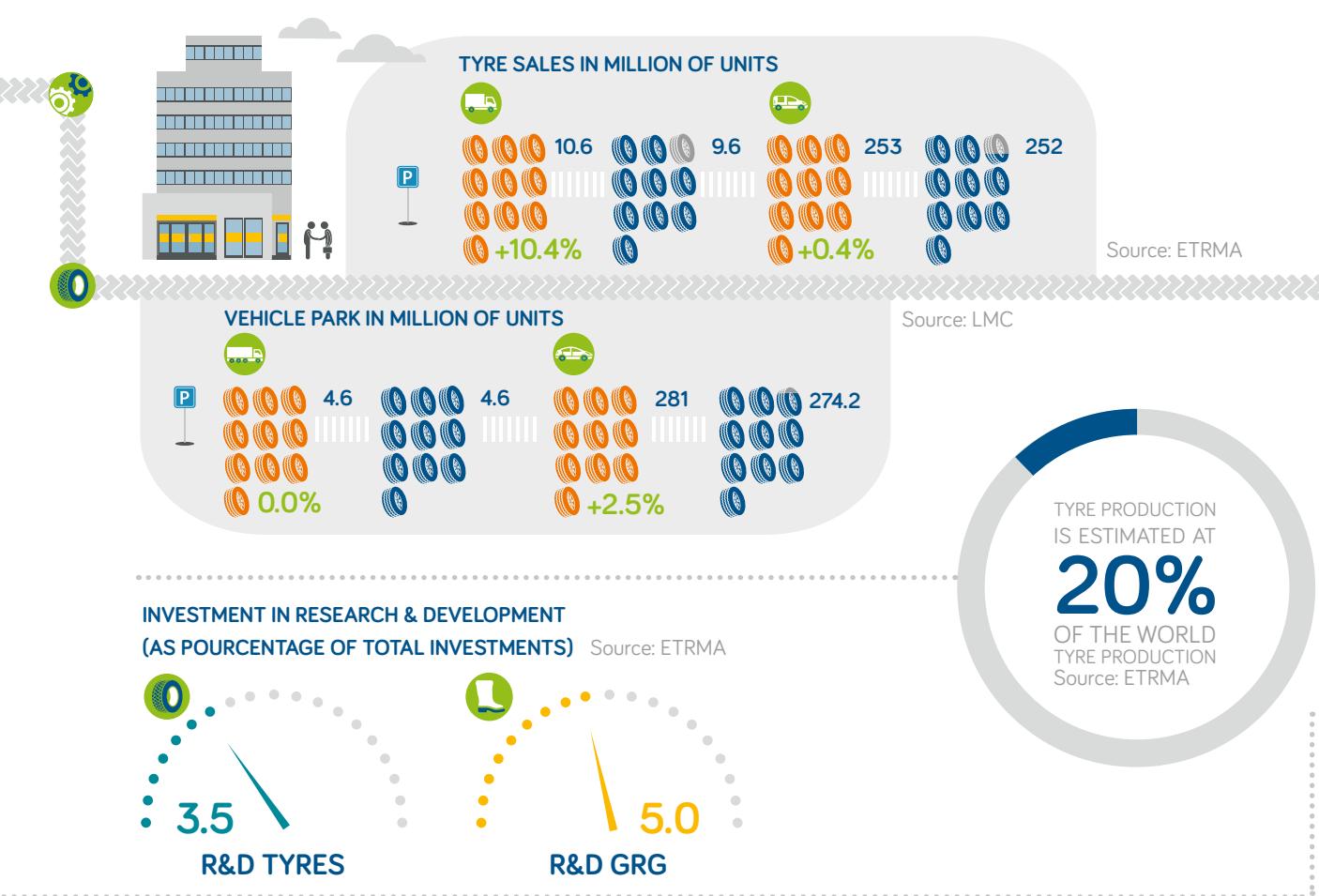
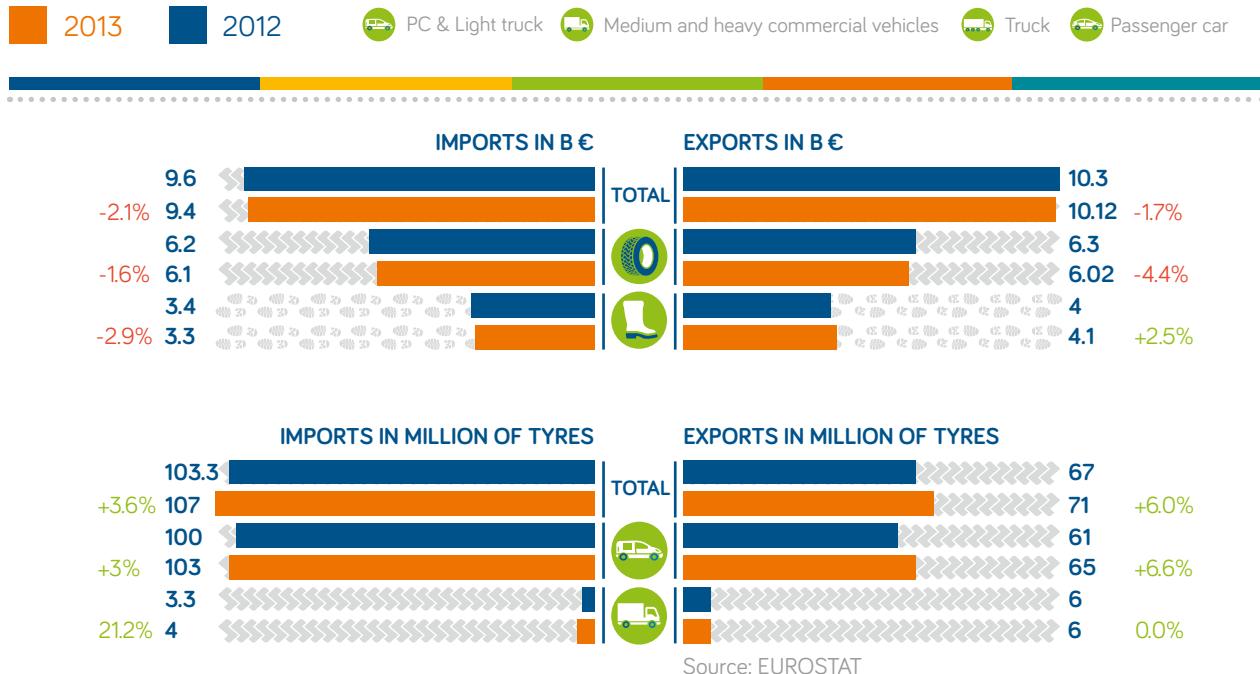
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KEY FACTS 2013 DATA FROM ETRMA MEMBERS IN EU27 + TURKEY*





MESSAGE FROM THE PRESIDENT

In the European Union, 2013 represented in many ways the end of a cycle. In economic terms, the crisis that since 2009 has been hitting the Union seemed for the first time to relent its grip, giving governments and industry alike the hope of better times to come. For the tyre and rubber industry this meant still a year of transition, with mixed results in terms of production and sales.

Throughout the crisis, the tyre and rubber industry remained strong in Europe, countering the economic downturn with investments in performances and technological innovations, remaining one of the manufacturing industry strongholds of the EU and altogether contributing to half a point of the union's GDP.

From a regulatory point of view, 2013 was also marked by the conclusion of the legislative process (vehicle noise regulation, periodic and road side inspections, etc.) and by the implementation phase of several EU regulations on which the industry had been working for years (tyre labelling and minimum requirements, second REACH registration deadline, etc.). The work of ETRMA on these and many others files has been relentless, ensuring that the industry was prepared and the EU decisions well informed.

2014 is a year of new beginnings, with a new European Parliament and a new European Commission, more regulatory challenges and opportunities stand ahead and we hope that after a legislative term marked by game-changing decisions, this will be focussing on their fair and harmonised enforcement as well as on supporting those industries that most are doing to foster the presence of a strong manufacturing industry in Europe and ensuring fair trade between Europe and other geographical zones.

To make this happen, a continuous dialogue with our members and with the legislator is of great importance, as such relationships have proven essential to ensure the avoidance of pitfalls and more should be done towards the creation of a European space where our industry can realise its full potential in terms of growth, sustainability, competitiveness and innovation.

These together with safety, efficiency, mobility and global access are the cornerstones that our industry has been building upon since its very existence, moving us every year a bit further towards bettering ourselves for the benefit of European society as a whole.



Patrick Lepercq
President of ETRMA

ETRMA MISSION

As the spokesman of tyre and rubber goods producers mainly to European institutions, ETRMA activities focus on the following key interdependent areas.

➤ REPRESENTATION

The primary objective of ETRMA is to represent the regulatory interests of the European tyre and rubber manufacturers at both European and international levels. ETRMA is the sole interlocutor, specifically designated by the European tyre and rubber producers to carry out this critical task. To work effectively, we are involved in continuous dialogue with the relevant EU and international institutions, national agencies and other industry sectors.

➤ COMMUNICATION

Successful representation and co-ordination activities require clear and effective communication, both with our members and external institutions. ETRMA is committed to ensuring that members are always consulted on any policy and regulatory issues that might affect the sector. In addition, it is ETRMA's role to communicate our members' common position to the relevant authorities on these issues.

THE SECRETARY GENERAL REPORTS

From the kitchen to the road, from health to sports, from cars to aerospace, rubber in its many different shapes and forms is part of our everyday life. Of these varied applications, mobility is certainly the one in which our industry has the most to offer, opening new horizons not only in high-end specific applications, but also by improving our day to day travel in terms of safety, comfort, fuel efficiency and reduced environmental noise. With the EU institutions working intensely on these subjects, ETRMA has been playing an important role to ensure that this contribution is not overlooked, but built upon, as tyres are undoubtedly a key component of the vehicle, which in turn is part of a broader eco-system including the road and the drivers.

A fair and balanced approach is therefore crucial to ensure the competitiveness of the industry as investments in innovation, regulatory compliance and sustainability have remained high throughout the prolonged economic crisis. Sadly, these investments will never be enough to further enhance our competitiveness if the internal and global markets do not ensure a fair level playing field. Lack of harmonised standards in the EU and globally, the presence of non-compliant actors and of barriers that prevent access to the most promising markets around the world are all negative factors that the industry would like the next European Commission and

the new European Parliament to tackle, together. Positive contributions drawn from enhanced dialogue with the European Institutions and the stakeholders of the industry value-chain, the institutional support to anticipate the structural changes, to develop the skills matching the industry future needs and to support research to integrate the circular economy principles into business practices are amongst the few and ambitious challenges for the future Legislature.

In this context, the efforts of the industry "not to waste its waste", but to turn it into new resources have been considerable and it is our hope that they will be boosted through the support of the legislator. Finally, the work done by ETRMA on natural rubber in the context of the European Innovation Partnership for Raw Materials deserves a special mention as it could, in the long run, break the current complete dependency on imports and ensure a more sustainable EU-sourced natural rubber supply, developing a whole new product and value chain to the benefit of the European economy and society.

I wish you all a useful reading!



Fazilet Cinaralp
Secretary-General

④ PROMOTION

ETRMA endeavours to further enhance the image of the tyre and rubber industry by informing authorities of our policies and subsequent actions in areas including the economy, health, safety & environmental protection and transport. ETRMA is also committed to ensuring public awareness of the significant developments achieved by the tyre and rubber manufacturers in these different areas.

④ TYRE TECHNICAL LIAISON

ETRMA works closely with ETRTO (European Tyre and Rim Technical Organisation), which is responsible for standardisation, and provides expertise on technical performance and requirements for tyres, rims and valves.

④ CO-ORDINATION

Efficient representation requires effective co-ordination between members. ETRMA acts as the co-ordination centre for the European tyre and rubber industry.

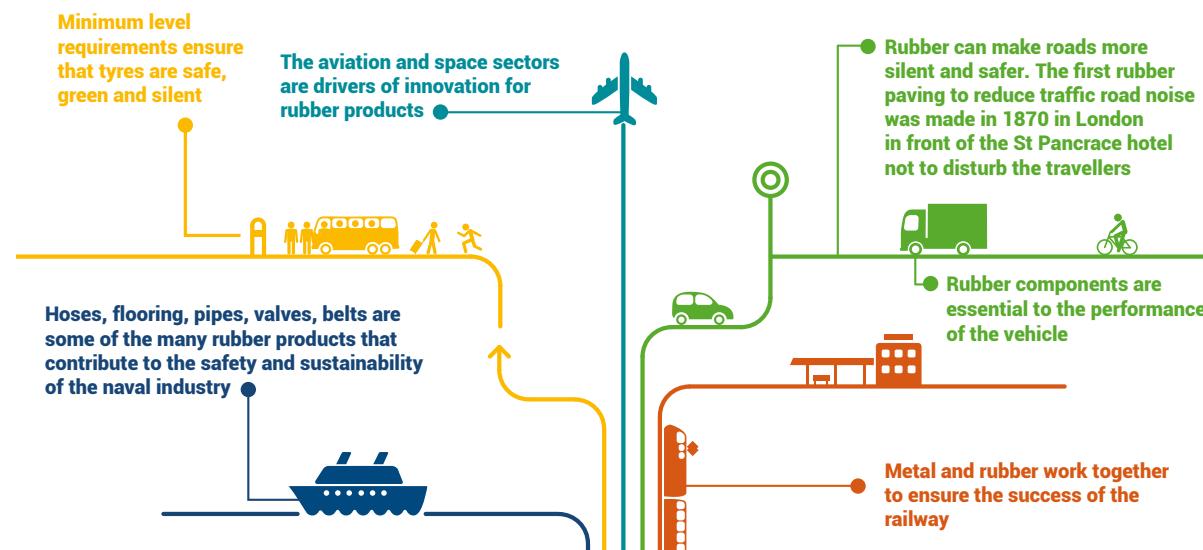
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SUSTAINABLE MOBILITY





RUBBER & TRANSPORT



NO RUBBER – NO TRANSPORT!

Products made from rubber are a vital part of everyday living. In homes, hospitals, hotels, offices, laboratories, construction and production facilities, rubber's applications are so amazingly broad that comparatively few people are aware how dependent we are on this remarkable product.

Within this very wide array of applications, the transport area accounts for more than 75% of production. This strong link between transport and rubber is not only tyres, but a wide number of parts and components used in road transport and beyond, including hoses, seals, pipes, flooring, engine mountings, fan belts, etc. Furthermore, the rubber industry contributes significantly to improving the sustainability of transport through its infrastructure as rubber added to the road surface can help making it more silent, durable and safe.

From its early days applications as an eraser, in medical probes or to waterproof textiles, "sky is the limit" seem not apply to the rubber industry, as the evolution of such an ancient material seems not to have yet found its bounds. As rubber preserves its elasticity when subjected to great variations in temperature (from - 50 to + 150 °C), it is used for components also in the aeronautical and space industry. Having followed man into space, the rubber industry will continue to work to bring mankind wherever it will decide to go next and with whichever means of transport it will chose!

As even most of the shoes we walk in have a rubber component, it is obvious that mobility cannot exist without the rubber industry. As it will be shown throughout this Report, the European rubber industry has greatly contributed in recent years to the pledge of the European Union towards a safer, more environmentally conscious, and more competitive transport. From the sourcing of raw materials, through its production processes, to the end consumers, the European tyre and rubber industry has acted as a responsible player and, after years of preparations, some of these actions are starting to bear the fruits.

CONTRIBUTION OF TYRES TO THE OVERALL VEHICLE PERFORMANCE

No matter how much a car may be powerful, green and safe, its performance on roads depends critically on the tyres it wears as well as on the streets it rolls on. The vehicle sector is the biggest user of tyres, but the tyre business does not stop there: the movement of both passengers and goods as well as air transport depend on tyres. Even in the rail sector, there are some high speed trains which use rubber around the wheels to smoothen the roll.

The first and the ultimate raison d'être of a tyre is to hold a vehicle on the road as a primary safety component. Furthermore it has important functions like

providing steering response and comfort. Finally, tyre performances – whose minimum requirements were tighten in the General Safety Regulation (EU 661/2009) – affect directly the safety, the fuel efficiency and the rolling noise of the vehicle.

As a consequence of this strong interlink, legislations on vehicles and tyres are also strongly linked and, sometime, they run the risk of colliding or duplicating similar and overlapping rules. As tyres are regulated not only in the EU, but internationally at UN level, it is of the utmost importance that such regulations are integrated in the EU system and taken into account when imposing new rules on the vehicle as a whole.

ETRMA will continue working to ensure that future legislative projects, such as the strategy to address CO₂ emissions from heavy duty vehicles, takes into account the steps already taken by the tyre industry and the potential that current legislation will deliver in terms of CO₂ cuts when fully implemented. This approach will help ensuring that regulatory overlap or double legislation is avoided. Furthermore, it will help avoiding inconsistencies in evaluation and testing

HOT SPOT

TPMS: ACTION NEEDED!

As the EU wants to become the “a world leader in safety and security of transport in all modes of transport”, all opportunities should be used to promote safer vehicles. In this context, all provisions included in the General Safety Regulation (GRS) on the Tyre Pressure Monitoring System (TPMS) should be implemented. Extending the mandatory fitment of tyre pressure monitoring to light and heavy commercial vehicles will help drivers to maintain their tyres fit for rolling and achieve the safety and environmental goals of the GSR. TPMS is key to help drivers understand the importance of acting quickly to address tyre under inflation or failure. The tyre industry has made great steps in recent years to improve the safety of European drivers and it stands ready to continue assisting the European Commission in realising its targets.

methods in various pieces of legislation, whilst fostering the competitiveness of the sector.

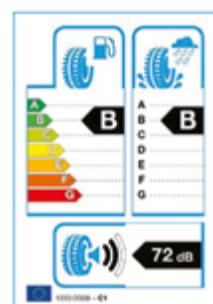
Finally, like in the case of the regulations on agricultural vehicles and two- and three-wheelers approved in 2013 (EU 167/2013 and EU No 168/2013, respectively), it will be of fundamental importance that when reviewing vehicle type approval legislation, enough powers and instruments will be given to market surveillance authorities to ensure that all players on the market abide by the same rules.

INFORMED CHOICES

Technological progress and investments to improve the performances of a product will not have an impact on the market until consumers will understand what they are buying and make their choices on the basis of clear and unbiased information.

Tyre labeling

Until the Tyre Labelling Regulation (EU 1222/2009), European consumers had no way to differentiate tyres on the basis of their performance remaining mostly unaware of what a tyre can do. Through the labelling, since November 2012, tyre manufacturers assign grades from A to G for rolling resistance and wet grip. In addition, the number of dBs on the label displays their rolling noise.



Almost two years after this legislation came into force, it is still difficult to assess its impact on consumer choices. The first press reports show a certain degree of scepticism and more time – and a different general economic situation – may be needed for consumer to shift their purchasing choices from price to performances. On the other hand, the labelling regulation has already had the effect of creating new competition grounds amongst manufacturers.

As implementation is continuing and consumers are getting used to the label, there is the need to secure their trust as well as to safeguard the investments made



WHAT A TYRE CAN DO



by compliant tyre manufacturers by rolling out market surveillance campaigns that would identify cases of tyres bearing misleading, fake or counterfeited labels.

and their trailers in order to enhance road safety and environmental protection.

MORE ACTION ON ROAD SAFETY

The roadworthiness package

The European Commission's commitment to a long-term visionary objective of abolishing road deaths and serious road traffic injuries has been trumpeted high and low over the past few years and ETRMA had very high expectations from the Road Worthiness Package, which was finally approved by the Council and the Parliament in the beginning of 2014.

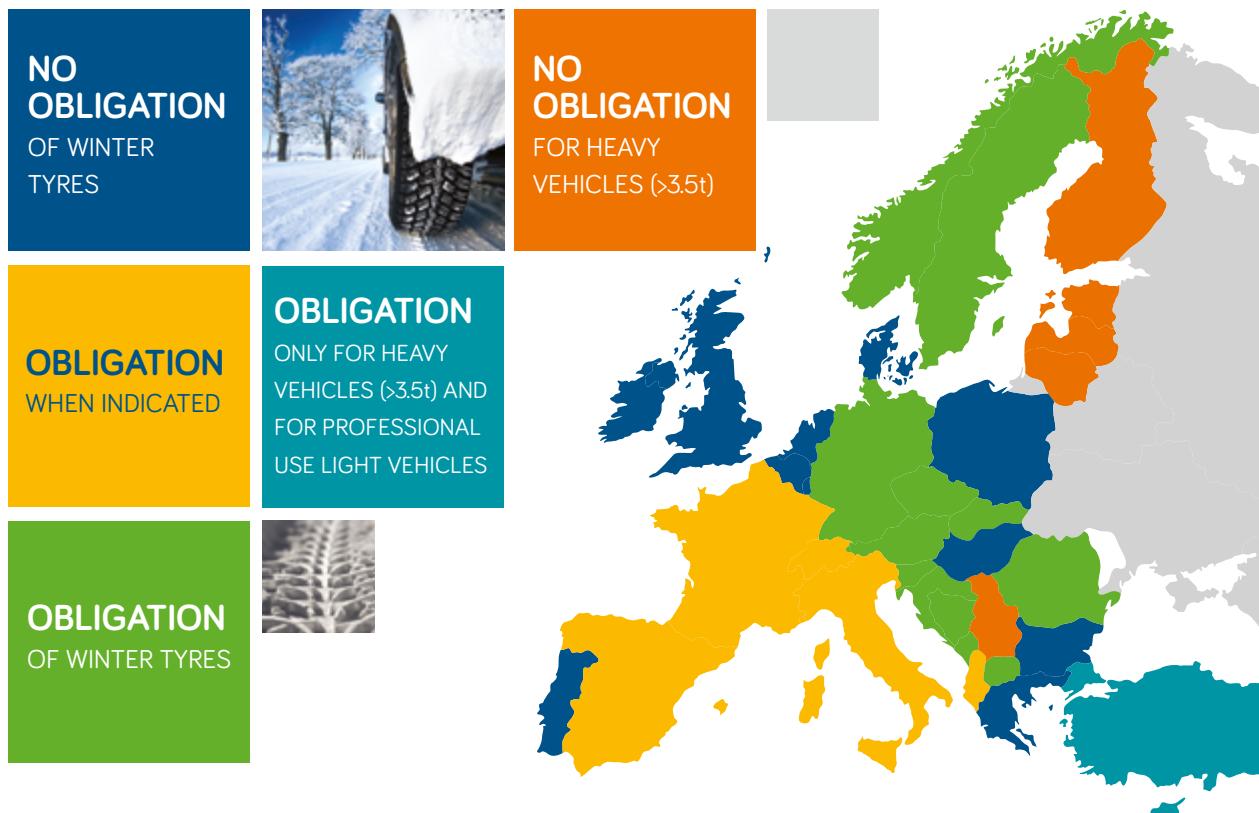
Poor vehicle maintenance is not the sole cause of accidents on European roads, but it is a contributor and a poorly maintained tyre can have disastrous consequences on road safety.

The final text of the package includes three Directives: one on vehicle registration, one on periodic roadworthiness tests and one on technical roadside inspections with the objective to lay down updated and harmonised rules on the roadworthiness testing of motor vehicles

With regard to tyres, the European Parliament felt the need to improve the text proposed by the European Commission by adding checks on tyre pressure to those on tyre tread depth, the sidewall type approval marking, proper fitment, tyre integrity and the functioning of the Tyre Pressure Monitoring System (TPMS). The proposal of the European Parliament was partly accepted with regard to periodic tests, but it was instead rejected for road-side inspections.

The two Directives also impose harmonised standards to assess the deficiencies detected which are defined as minor, major and dangerous according to the risks for the vehicle safety. Finally, the scope of the periodic roadworthiness tests was extended, although pending a review process and in an extensive period of time, to two-wheelers. Hopefully, in due time, this will have the effect of harmonising a very patchwork-like situation with 11 Member States out of 27 having no testing obligations for two-wheelers until now.

In conclusion, this newly adopted legislation is a starting point, which will require further work in the future.



Proper tyre conditions

Driving with tyres at the right pressure is of paramount importance for vehicle safety, since only properly inflated tyres hold the load, adhere to the road, consume less fuel, produce less noise, assure the best braking distance and contribute to extending the lifetime of the tyres. Indeed, under-inflated tyres can increase fuel consumption by up to 4%, as they require extra energy to roll, while reducing tyre lifespan by 45%. Having tyres at the right pressure also provides environmental benefits as it enhances the efficiency of low rolling resistance tyres, and can reduce CO₂ emissions by as much as 5g for each kilometre driven. The depth of tread is also crucial for tyres. When a car travels on tyres with a tread depth below 1.6 mm (the legal minimum for passenger car tyres), the speed at which hydroplaning starts is reduced by up to 40% and the breaking distance from 80 km/h will increase by 13 metres.

Another tyre security feature, which depends very much on the choices made by the drivers as well as by the local authorities, is that of the fitment of the vehicle with tyres adapted to the climatic conditions.

Winter tyre technology is specifically developed for temperatures under 7°C (a threshold at or below which it is safer to use winter tyres) in order to provide better

grip and handling on cold, wet and snowy roads. This translates into better adherence/grip on snow and in a reduction of fuel consumption. Finally, they significantly reduce braking distances compared to summer tyres and increase safety compared to summer tyres or tyres with chains, in winter conditions. Technical requirements for winter tyres have been agreed in EU legislation (EU 661/2009) and it is

HOT SPOT

TYRE MAINTENANCE IN NUMBERS

 Campaigns carried out by ETRMA members across the EU in recent years show that nearly 80% of vehicles run with underinflated tyres and 25% on overworn tyres. The tyre industry carried out periodic campaigns to raise awareness about good tyre maintenance. Despite these efforts, a recent survey carried out in the UK on 1000 motorists showed that 32% believed that kicking their tyre was an appropriate and adequate means to measure their inflation level. It is therefore clear that the industry cannot be left alone in the battle towards safer transport through better tyre maintenance, but that both drivers and authorities need to be involved.



ETRMA's objective to see the definition of winter tyres harmonised in all EU Member States.

and other constituents of road dust. Ambient airborne particulate matter can include TRWP, especially in urban environments and locations near roadways.

TYRE-ROAD INTERACTION: WHAT NEXT?

Tyre road wear particles

The European Environment Agency (EEA) pointed out that particles less than 10 micrometers in diameter (PM10) pose a health concern because they can be inhaled into and accumulate in the respiratory system and that particles less than 2.5 micrometers in diameter (PM2.5), because of their small size, can lodge deeply into the lungs.

Traffic related sources have been recognised as a significant contributor to the ambient PM concentrations particularly in urban environments and major cities.

There are two main categories of these particles: exhaust vehicle emissions and non-exhaust traffic related emissions. The latter include particles that are formed from wear of vehicle components such as brakes, clutches, chassis and tyres but are also generated from road surface wear. They are also made of particles which already exist in the environment as deposited material which become re-suspended due to traffic induced turbulence.

Anticipating the development of regulatory requirements in terms of air quality, the tyre industry established in January 2006 the Tire Industry Project (TIP¹), under the umbrella of the World Business Council for Sustainable Development (WBCSD), to identify and address the potential health and environmental impacts of materials associated with tyre making and use. The current major focus of the TIP research is developing a better understanding of Tyre and Road Wear Particles (TRWP) generated during normal tyre use and wear.

TRWP consist of tread rubber and embedded minerals

According to state of the art research, TRWP have a size distribution (from 1µm-350 µm) that sets them apart from PM from exhaust emissions. Furthermore, no nanoparticles are generated from tyre & road wear, except when studded tyres are used and the smallest size fraction (~1 µm) contributes to PM10 only by ~1% in global field evaluation. This was confirmed by the fact that no observable adverse effect level of 112 µg/m³ was detected for TRWP in rats.

In conclusion, tyre and road wear particles do not present a significant risk to health or the environment and the work of WBCSD TIP has significantly increased the knowledge on such particles. Further research is on-going to fine-tune the scientific knowledge on such particles with global sampling measurements of their contribution to atmospheric PM 2.5.

Road grading

It has been demonstrated that road surface properties have a significant effect on the noise level created by the contact between tyre and road and for this reason, the latest vehicle noise regulation, recommended a more integrated approach towards ambient noise challenges.

In this context, the use of recycled rubber powder from tyres in the bitumen used in road surfaces has proved not only to reduce noise, but also to enhance other asphalt performances, such as durability of the asphalt pavements, the reduction of maintenance costs and improved friction, minimisation of hydroplaning with reduced splash and spray during rainstorms. Therefore, following the recent regulatory initiatives on the vehicle and the tyre regarding noise emissions, the European Commission should examine the existing opportunities for improvements in road infrastructure to meet overall environmental targets and enhance recycling.

¹ This project is chaired by the three largest tire manufacturers – Bridgestone (Japan), Goodyear (US) and Michelin (France) – and includes a total of eleven companies representing approximately 70% of the world's tire manufacturing capacity.

2 COMPETITIVENESS





MATCHING SKILLS

CARS 21 and its following action plan CARS 2020 are part of the European Commission's strategy to promote competitiveness in the automotive sector. The European tyre industry with 90 plants and 16 research centres in Europe remains a stronghold of European manufacturing and significantly contributed to both processes. The tyre industry is labour intensive and employs about 360,000 in Europe. This personnel needs to be highly qualified to produce complex, high-performance, quality products. Today, tyres are more complex and sophisticated than ever and they require a strong know-how to match the increasing expectations of the legislators and of the consumers.

In the turbulent economic environment of the past few years, it became clear that one of the key challenges that needed dealing with was the ability of the industry to adapt to changing social and economic conditions. To this end, labour market conditions were extensively discussed and the flexibility and availability of well qualified labour force and the human capital were identified as some of the competitiveness factors, key to the well-being of the industry.

In this context, an enhanced dialogue between business, education institutions, and the administrations is required in order to better develop the training and education programmes to match the needs of the labour market. This should lead to the creation of centres of excellence specific to different sectors throughout the EU. The role of clusters in this process should be enhanced and promoted. Finally, there is the need to have a large

variety of labour contracts. These, while preserving the right balance between protection of employees and flexibility needed by the employers, will help the market to face the increasing volatility of the economy. Members States, regions, companies and employees all have a role to play in this context as they share the competence and responsibility for increasing skills and competence levels.

MARKET SURVEILLANCE

Another element that determines the competitiveness of the European industry is the establishment of a level playing field, in which all actors play by the same rules. However, ETRMA's experience shows that alongside responsible economic operators, prepared to invest and adapt their products and production tools to comply with EU Regulations, there are others who cut corners or deliberately choose not to respect these rules in order to gain a competitive edge. These practices skew the European single market in favour of non-compliant operators, encourage illegal behaviours and could potentially put at risk the environment as well as citizens and consumers.

The Proposal for a Regulation on Market Surveillance – part of a wider Product Safety and Market Surveillance Package – intends to tackle this issue and gives Market Surveillance Authorities from the EU Member States – in cooperation with Customs Authorities – the responsibility to check that all operators on the European Market play by the rules.

HOT SPOT

CARS 2020 AND THE SKILLS COMMITMENT

 The criticality of finding the right skills for the right jobs is such that CARS 2020 has identified two key actions to be carried out on this subject. The first one regards the creation of the European Automotive Skills Council to bring together existing national organisations, employers and workers as well as education and training providers. In this context, ETRMA, together with the other associations representing the whole automotive value chain, presented in 2014 an application for EU funding to form the "European sector skills council for employment and skills in the automotive industry". In the meanwhile, the industry has already made use of the second action, which allows the use of European Social Fund for workers' retraining and re-skilling.

RECOMMENDATIONS FOR AN EFFECTIVE MARKET SURVEILLANCE



Introduction

Current and forthcoming EU regulatory framework on the automotive sector, especially with regard to safety and environment, is an unprecedented challenge and an opportunity for industry, consumers and authorities to contribute to ambitious policy. Proper enforcement of this regulatory framework should be an integral part of it, in order to ensure the competitiveness of the EU market and secure consumer safety. Market Surveillance is the only chance to ensure that all market operators play by the same rules.



The tyre regulatory case

Tyres are a complex and sophisticated product that is extensively regulated in the EU and over the years they have become the most regulated component of the vehicle. Many of the regulatory steps that are currently being discussed for other products (for example regarding safety markings and traceability) have already been undertaken in the case of tyres and their markings contain information on the manufacturer, the brand, the production and testing facility locations as well as several other information.

The Italian Traffic Police carried out several inspection campaigns from 2004 to 2013 on over 100,000 vehicles. Between 2009 and 2013, regions with up to 11% of vehicles fitted with non-homologated tyres were identified. Furthermore, the results of another campaign carried out in 2010 on 20 000 motorcycles, showed that as much as 20% of these were fitted with tyres that were non homologated. One should wonder the impact of such mal-practices on the safety of the road users!

Finally, industry campaigns carried out by ETRMA in 2010 and 2011 showed a non compliance rate with the REACH Regulation on PAH content in tyres between 10 and 11%. A more recent testing campaign in 2012 carried out by ECHA confirmed this data and showed that the number of REACH non-conforming tyres is still high with over 8.5% of tyres from China containing PAH found on the market. Given the number of tyres imported into the EU and the number of vehicles on European roads, the percentages of non-compliant products shown above translate in several millions of European drivers using illegal, potentially unsafe tyres.



Non-compliant tyres = unsafe?

A non-compliant tyres is not necessarily unsafe. However, in some cases, such as non-homologated tyres or tyres not respecting wet grip requirements, these could be a danger to road safety. In other cases, whilst not being dangerous in terms of safety, non-compliant tyres can constitute a hazard for the environment. For example if they do not respect rolling resistance requirements.

In more general terms, all non compliant tyres are a danger and a failure of the EU internal market which is skewed in favour of economic actors operating illegally.



Market surveillance on tyres: does it work?

It is possible to make a first check of compliance with EU legislation by ensuring that the "E" marking is placed on the tyre and followed by the relevant codes.

However, our experience shows that this is not done often enough and that more is needed to prevent illegal products from entering the European Market. Counterfeited, non-homologated or wrongly marked tyres as well as tyres not respecting EU legislation for labeling or minimum requirements or PAHs content are found on the European market and roads.



This Regulation – albeit not specific to motor vehicles – goes in the right direction.

Several positive items were included by the European Parliament and should be safeguarded going forward, particularly, the extension of the concept of risk to cover products in breach of EU Regulations. The proposal of the European Commission was further improved by the introduction of a clearer definition of economic operators and of their obligations to ensure product traceability and identify and sanction relevant actors according to their level of responsibility.

Finally, another essential element of this proposal is the creation of a European Market Surveillance Forum (EMSF), which includes, amongst others, the Tyre Labelling Market Surveillance Administrative Cooperation (Tyre Labelling ADCO). Only market surveillance authorities can participate in the ADCOs, but an observer role for consumer and industry associations is foreseen. It would be advisable to make this cooperation as regular as possible to make full use of the industry expertise.

HARMONISED STANDARDS

Not all products are regulated at European level and those that are not see a loss of competitiveness from this inefficiency of the European Internal Market. In the rubber sector, this is the situation for two categories of products:

Rubber food contact applications are represented by a very broad range of products that go beyond the packaging, food transportation and handling and include pipes and machinery components, pumping, seals and baby feeding. The rubber industry complies with the requirements for all food contact materials laid down in Framework Regulation 1935/2004 by means of two Council of Europe Resolutions: AP-2004-4 (rubber products intended to come into contact with foodstuffs) and AP-2004-5 (silicones used for food contact applications). The industry, which operates in a non-homogeneous legislative framework, needs harmonised requirements across Europe. ETRMA is actively supporting the work of the European Commission and of the European Food Safety Authority (EFSA) which

aim to harmonise legislation on food contact materials, to ensure consumer safety and to ultimately lead to a proper functioning of the internal market.

Construction products and products entering into contact with drinking water represent an important niche for the general rubber goods applications. While construction products are homogeneously regulated at EU level – by means of the Regulation 305/2011, which entered into force in March 2011 repealing the Construction Product Directive (89/106/EEC) – European legislative developments is still required to properly regulate products entering into contact with drinking water (such as sealing, hoses, pumps, membranes and valves).

Such products are only partially covered by the Drinking Water Directive (98/83/EC) and, at European institutions level, there is no current intention to develop a European Acceptance Scheme, which would certainly help to avoid acceptance costs coming from multiple approvals and will ensure a high level of protection and consistency.

ACCESS TO THIRD MARKETS

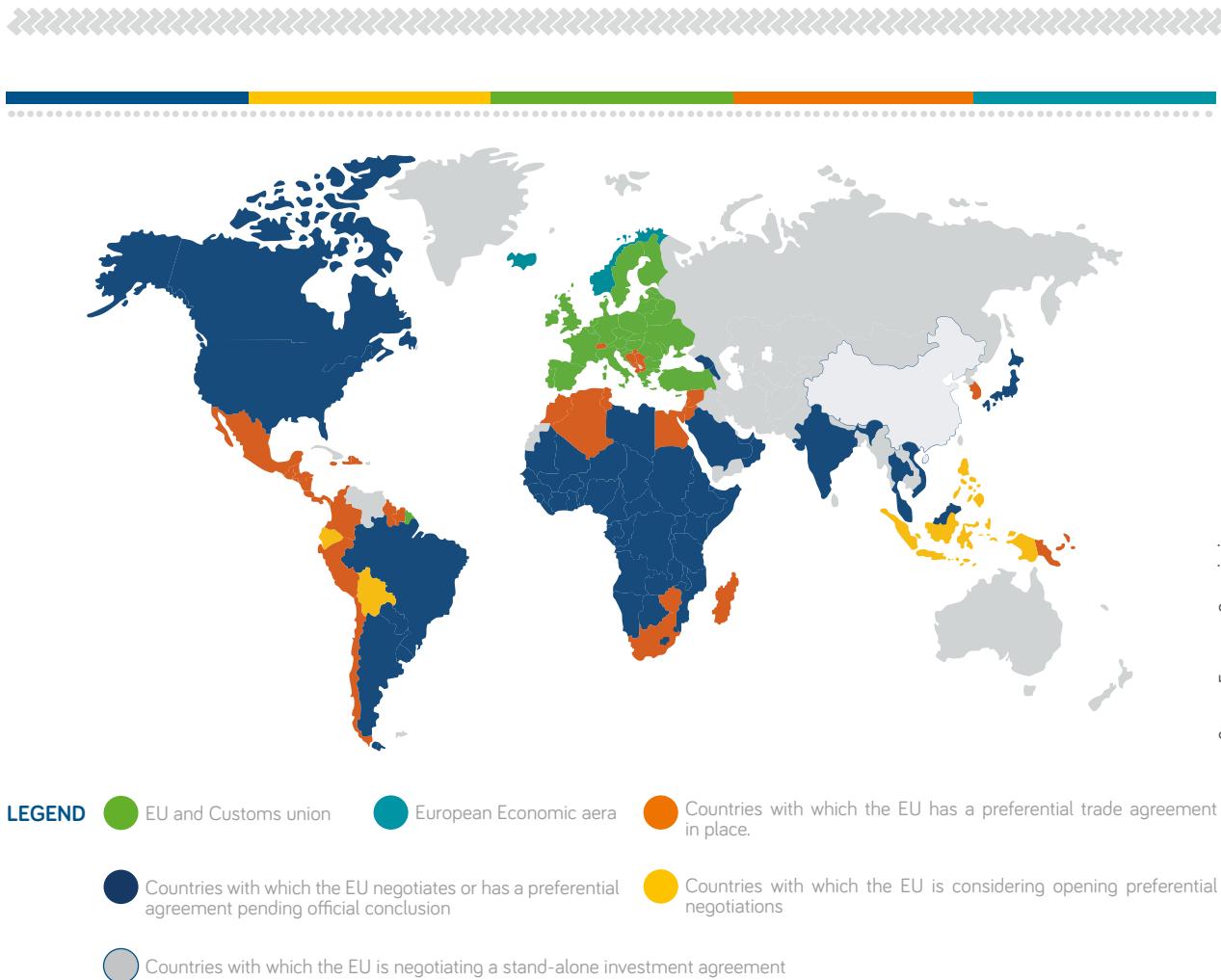
The fairness and efficiency of the internal market is a very important ingredient of the competitiveness of the European industry, which needs to be able to access third markets and to follow growth around the world.

Unfortunately, many of the developing markets that bear the biggest potentials are also those that have erected throughout the years the biggest technical barriers to trade. Furthermore, it is often these very same countries that are the biggest exporters and benefit the most from the openness of the European market.

Free Trade Agreements

ETRMA has been supporting the European Commission to remove market-access barriers and has promoted the conclusion of those Free Trade Agreements (FTAs) that are ambitious and comprehensive enough to achieve this objective.

Any FTA should effectively liberalise the market and create a level playing field between the economic operators of the two commercial partners. Failing to



do so for all industries concerned would not only result into a missed opportunity, but in an actual damage as a key tool for negotiations would be lost and a dangerous precedent would be created when discussing FTAs with other countries.

Furthermore, it is essential that when evaluating the relevance of an industry in any FTA, this is done taking into account the potential for market expansion, rather than the pre-negotiation trade volumes. This is key to ensure that the **FTAs can bring effective market access for those industries whose trade flow is most hampered by technical and administrative barriers and that would have most to gain from trade liberalisation.**

ETRMA has also been calling for the dimension of raw materials to be included in the negotiations, something that is largely recognised as necessary in the "EU Trade Policy for Raw Materials".

Technical Barriers to Trade

ETRMA has been working closely with the EU to offer a prompt evaluation of the draft regulations notified

through the WTO by other countries and potentially constituting barriers to trade (more than 20 in the past 18 months). Unfortunately, not all countries notify their regulations in due time and publish all relevant documents. These shortcomings should be corrected and trade agreements should also be used to ensure transparency in the adoption process of regulations that could impact trade flows. Furthermore, FTAs should ensure that partners' new regulations are adopted in the spirit of regulatory convergence and cooperation, within the UN 1958 framework.

In addition to bilateral contacts, ETRMA will continue to contribute to the tyre dedicated Market Access Working Group, which – active since 2008 – was merged in the beginning of 2013 with that of cars and car parts. This Group remains at the top of ETRMA priorities as the ideal forum to discuss and address all regulatory hurdles standing in the way of market access.

International harmonisation: the role of the UN
Global products, such as tyres, require global rules. It is for this reason that European tyre industry has been



working to promote global technical standards and performance requirements as well as mechanisms to establish effective cooperation.

This process of harmonisation is key especially as a growing number of countries are developing their own tyre regulations. It is very important that regulatory competition is avoided and that the UN context can bring closer together all major tyre markets, including Brazil, Japan, Korea and, in the future, China.

HOT SPOT

GTR ON TYRES, ALMOST THERE?

 The Global Technical Regulation on tyres has been negotiated in the context of the UN 1998 Agreement since 2004. In 2014, significant steps forward have been made and there are now realistic expectations that a conclusion may be in sight. The GTR on tyres should allow in the future the harmonisation of technical requirements and test methods in all major markets (from Brazil to US, from Europe to China) and positively impact the tyre industry globally.

REACH: ABILITY TO ANTICIPATE AND RESPOND

The European Union is on many occasions ahead of the global regulatory game and the REACH Regulation is one example of this pioneering role on the global scene.

Through this Regulation, which aims to improve the protection of human health and the environment from the risks that can be posed by chemicals, a fine line was traced between hampering and enhancing competitiveness of the chemical industry and of its downstream users. On the one hand, chemical restrictions on regional level could result into a diminished competition on the global market. On the other hand, using the right tools, this could give a

competitive advantage to the European industry.

The industry is working hard to keep on the right side of this fine line in order to transform this challenge into an opportunity for innovation. One key enabler of this positive approach to the challenge is **the ability of the industry to anticipate and respond** to emerging risks and consequently evolving regulatory frameworks. In this context, it is key that **the European Commission keeps the industry involved in all future regulatory steps, as participation, contribution and preparation are essential elements of transforming challenges into opportunities and opportunities into innovation.**

In this context, the establishment two years ago, and deployment of the **ETRMA Rubber Chemical Monitoring Programme** can be considered as a milestone in the approach taken by ETRMA towards a proactive and sustainable management of constantly evolving requirements on chemicals and their safe use. Such programme, particularly developed in support to SMEs, covers several hundred chemicals used in the sector and it spans from monitoring legislative changes to gathering and consolidating information on uses, applications and potential risks.

SPERCs

ETRMA coordinated, in cooperation with the European Rubber Chemicals Association, the revision of the rubber industry Environmental Release Categories (ERCs); based on an extensive European waste water testing campaign, more accurate emission factors for waste water were generated (Specific Environmental Release Categories - SPERCs). The approach followed by ETRMA is currently under assessment by the European Chemical Agency as a good case study to be eventually promoted across other industry sectors.

The transparency of the decision making process and the ability of the industry to bring its knowledge and expertise to the table is one essential element, not only to enhance the preparedness of the European industry, but also to ensure that the regulatory steps taken are in line with the objectives they pursue.

Nanomaterials

This process is particularly important for those elements that are still in the course of being analysed and likely

to be regulated, such as nanomaterials and endocrine disruptors. Back in 2010, the industry's views were published in an ETRMA paper: "*REINFORCING FILLERS IN THE RUBBER INDUSTRY: Assessment as potential nanomaterials with focus on tyres*", a cutting-edge industry publication on this topic.



In July 2014, the OECD published a report that shows that the use of nanomaterials in tyre production could help foster the sustainability of the tyre industry and reduce the environmental impact of vehicles, provided that potential environmental, health and safety risks of the technology are managed carefully.

The report, which is the result of a two-year project, can be consulted on the OECD website.

Another good example of the ability of the industry to deliver when the conditions are right is the **SafeRubber project**, which in July 2013 proudly announced "*Mission accomplished! The SafeRubber project developed a safer alternative to the accelerator molecule used in the vulcanisation of chloroprene rubber*". This research, which involved 12 partners from all over Europe including ETRMA, received EC funding under the FP7 framework to proactively develop a new, safe, multifunctional accelerator curative molecule which can replace thiourea (ETU) based accelerators in the vulcanisation process. The project was designed to anticipate and respond to the possibility that ETU could be restricted under the REACH regulation after it was classified as toxic to reproduction in Europe. This success story should serve as a best practice for the industry!

Occupational exposure

The ability to act proactively is also key when it comes to **safety in the work-place**. For this reason, ETRMA started working already in 2011 on the possible review of the 2004 Carcinogens Directive and particularly on the inclusion of, amongst other substances and processes, "rubber process fume and dust" in the list of human carcinogens in Annex I. Based on the analyses and conclusions of several scientific and legal assessments, and referring to the experience of our industry in the last thirty years or so, ETRMA advocates

that **effective protection of workers is achievable only through identification and quantification of individual hazardous substances**. Such advocacy activities are proceeding in order to avoid that an indiscriminate and counterproductive regulation of process fumes and dust as a whole would distract the attention from the ongoing industry targeted activities of hazard and risk identification. ETRMA has established a team of analytical experts aiming to develop internationally recognised and standardised test methods to identify and assess the chemicals.

Other important chemical safety legislation on which ETRMA is working is the Revision of the Seveso Directive as well as new CLP requirements, which in 2015 will apply to chemical mixtures. In all these cases, ETRMA assists its members to prepare and implement.

Future restrictions on PAHs on consumer products

Along the lines of the polycyclic aromatic hydrocarbons (PAHs) restriction on tyres production, the European Commission amended the REACH regulation by extending this restriction to consumer products such as toys. This will come into force as from 2015. Proper implementation and enforcement will be key to ensure a level playing field. In this context, it is of utmost importance that harmonized test and verification methods are adopted and applied.

HOT SPOT



ERRRLAB
European Research &
Rubber Laboratories

► ERRRLAB is a European network of laboratories for research and testing in rubber applications, established by the benchmark rubber laboratories of France, Germany and Italy, with the support of ETRMA and of the rubber industry National Associations. Its objective is to share resources and expertise in order to provide an ever better and complete support to the rubber manufacture industry. Networking and cooperation can support the industry to anticipate and respond to the ever challenging safety and environmental requirements.



Internationally established harmonised supply chain reporting tool

The International Material Data System (IMDS) was launched in 2000 and is the global reporting standard tool that the automobile industry uses to collect and report substance information throughout the automobile supply chain. Communication and exchange of information regarding the use of these substances in automobile products is facilitated by the Global Automotive Declarable Substance List (GADSL) which is based on national and international regulations, scientific standards, and risks assessments.

ETRMA has been actively involved since its start, in discussions with automobile manufacturers to ensure a continued improvement of the IMDS system and a prompt GADSL update reflecting the constantly increasing worldwide chemical legislative requirement. In particular, with the objective to improve, in line with customers and regulatory requirements, the way how the tyre chemical composition is reported through the IMDS system.

Emission Trading Scheme III

Another Regulation with extensive consequences on competitiveness is the Emission Trading Scheme (ETS), which aims to further reduce industrial greenhouse gas (GHG) emissions. The ETS system foresees the identification of sectors which, due to risk of carbon leakage¹, are entitled to a partial compensation for

the ETS direct costs. However, as long as this system remains a unilateral initiative, trade intensive industries will be put under strain in the global context. This is particularly true for the European tyre industry, which is subject to great international competition. The inclusion on the carbon leakage list is therefore essential, but it does not make up for the indirect ETS costs deriving from the increase in the price of energy (electricity and steam), which accounts for more than 60% of the total ETS costs in the European tyre industry. This further worsens an already difficult situation within the European internal energy market, where big differences still exist in energy price between different Member States. For this reason, ETRMA has been expressing the need for an EU common energy policy: this should enable comparable energy prices across the EU Member States instead of the current, huge, disparities.

The question of the price of energy is becoming an increasingly important factor of influence in the competitiveness of the European Industry, which due to increased costs loses ground on the international arena.

HOT SPOT

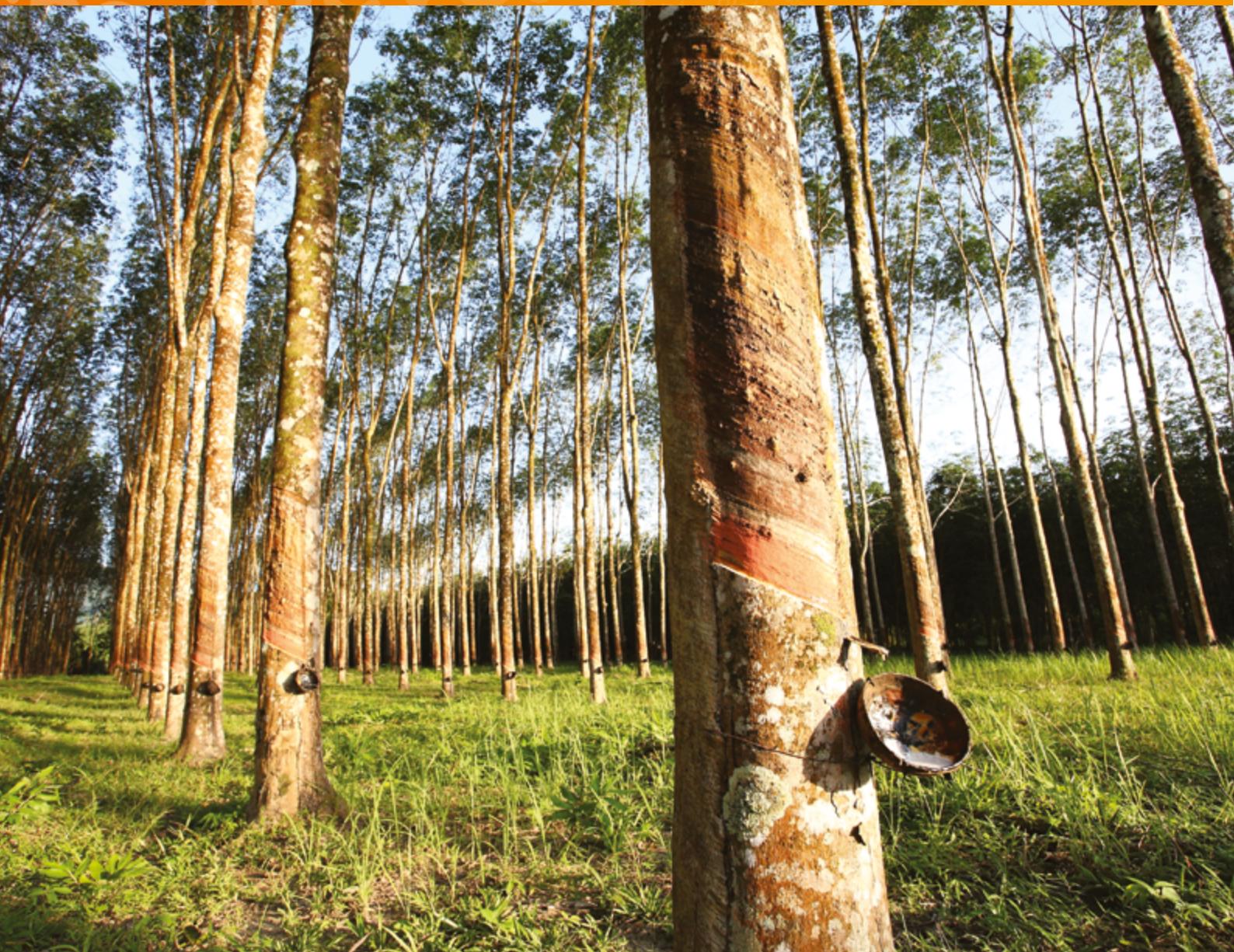
UPCOMING ENVIRONMENTAL LEGISLATION

- Further legislative projects will be brought to the attention of the European Parliament in the coming months and they will have to be closely monitored as they could affect the competitiveness of the European industry. These include the *Air Quality Package* and the *Climate and Energy Package*, where some of the issues outlined above will be tackled.

¹ Carbon leakage is the term used to describe the situation that may occur if, for reasons of costs related to climate policies, businesses were to transfer production to other countries which have laxer constraints on greenhouse gas emissions.

3

SUSTAINABLE RESOURCES





FAIR ACCESS, INNOVATION AND DIVERSIFICATION

Fair and unrestricted access to raw materials is essential to the manufacturing industry. This is also the case for the tyre and rubber industry and particularly with regard to natural rubber. All natural rubber is extracted from one biological source: the Brazilian rubber tree (*Hevea Brasiliensis*), all of which needs to be imported from outside the European Union. Currently, there is no viable substitute to natural rubber that could be used as a replacement in all its applications.

Natural Rubber

More than one million tons of natural rubber are used in EU, this represents 10% of world production. The automotive applications are by far the largest users (85%) of this raw material and tyre alone use 75%.

The main producing countries are Indonesia, Thailand, Vietnam and Malaysia who, together, produced in 2013 about 75% of the total of natural rubber in the world. The same proportion is reflected in the share of EU imports as they supply 73% of EU rubber. Natural Rubber (NR) alone accounts for 34 % of the European tyre manufacturers raw materials costs.

Indonesia, Malaysia and Thailand (accounting for 66% of global NR production, 68% of EU imports) have created, since 2001, the International Rubber Consortium Ltd with the objective of controlling the output and the price of natural rubber. This consortium has been used since 2008 to drive up the price of rubber through announcements threatening a production curb and recently, Vietnam (#3 world producer) was invited to join the Consortium.

Fluctuations in the natural rubber market are also linked to other "systemic elements", such as the long gestation and maturity period of the Hevea tree, the predominant role of small-holders in the production of natural rubber (85% of plantations < 3 ha), the fact that it is a labour-intensive crop and that is heavily influenced by climatic elements.

ETRMA continues working with the European Institutions in order to remove all sources of trade/export restrictions

and to support measures that contribute to higher visibility of the fundamentals such as planting/yields and government flanking programmes. This would lead to increased planning reliability for the industry as well as guaranteeing a sufficient supply for regions lacking these resources.

European Innovation Partnership on Raw Materials

The EIP on Raw Material was launched in February 2013 and looks at ways of boosting the production of raw materials in Europe with the objective of enhancing innovation, competitiveness and lessening its dependence on imports from third countries. These objectives could not be more fitting to the natural rubber value chain and ETRMA has been an active stakeholder in its work. In particular, the tyre and rubber industry has been advocating for increased investments in the expansion of the cultivation of *hevea brasiliensis* to other regions, such as Africa, with the double effect of diversifying natural rubber sourcing and promoting sustainable development. Furthermore, in the beginning of 2014 the *EUNARS-G* Raw Material Commitment was put forward. The project, which involves several other organisations, looks at the development of Guayule as an EU-sourced alternative to hevea-natural rubber. Research on this Mediterranean-grown bush started as early as the beginning of the XX century and has seen a renewed focus in recent years with several projects having been carried out by consortia (such as the EU-PEARLS) and private companies.



The IRSG and the sustainability of the rubber value chain

The International Rubber Study Group supports rubber producing and consuming countries by providing a reliable forum that serves as the authoritative statistics, information and analysis source on all aspects of the rubber industry, including production, consumption and trade in rubber as well as rubber products. Since 2011, the Secretary General of ETRMA has been chairman of its Industry Advisory Panel.

Based on the recommendations of this Panel, a Sustainable Natural Rubber Action Plan was announced in May 2013. This action was developed in the context of the increased global momentum towards sustainability,

The circular economy package: the new targets

SOME TARGETS IN EU WASTE LEGISLATION				
		MIN RECOVERY	MIN RECYCLING	COLLECTION RATE
Packaging	2008	60%	55%	
New proposed targets (COM 2014/397.)	2008	No change		
	2020	60% Min. recycling & preparation for re-use		
	2025	70% Min. recycling & preparation for re-use		
	2030	80% Min. recycling & preparation for re-use		
Cars	2015	95%	85%	100%
Electronics	2015	70-80% (by August)	70-80% (by August)	min. 4kg/inhabitant per year or µ amount of WEEE collected in the three preceding years (by year-end)
	2015-2018	75-85%	55-80%	
	2016-2018			45% of EEE put on the market
	2019			65% of EEE put on the market or 85% of WEEE generated
Batteries	2011		50% to 75% (efficiency)	
	2012			25%
	2016			45%
TYRES	2006	0 LANDFILL OF TYRES		
New proposed targets (COM 2014/397.)	2025	0 landfill of recyclable waste		
	2025	Waste in landfill = Max. 25% of municipal waste generated in year N-1		
	2030	Restrict the landfilling of non-residual municipal waste		
Biowaste diverted from landfills	2006	reduction to 75% of the 1995 level		
	2009	reduction to 50% of the 1995 level		
	2016	reduction to 35% of the 1995 level		
New proposed targets WFD (COM 2014/397.)	2015	separate collection: at least paper / metal / plastic / glass		
	2020	50% Municipal Waste prepared for reuse + recycled		
	2020	70% Construction & Demolition waste prepared for reuse + recycled or sent for other material recovery		
	2030	70% Municipal Waste prepared for reuse + recycled		
	2020	70% Construction & Demolition waste prepared for reuse + recycled or sent for other material recovery		

corporate social responsibility and resource efficiency and by the need for the players in the rubber industry to apply these principles when purchasing raw materials. Furthermore, as the smallholders' decision to plant new trees and tap depends on the opportunity costs, adequate long-term growth of the natural rubber supply also calls for positive action towards sustainability.

As a result of this commitment, in May 2014, the IRSG with the support of the entire rubber value chain launched the Sustainable Natural Rubber Initiative (SNR-i). This initiative is being developed as a voluntary and collaborative activity – through a working group composed of industry and producers' representatives of the whole rubber value chain. In this context,

criteria and indicators and related guidelines have been developed. These look at improving productivity and the quality of natural rubber. Furthermore, they focus on forest sustainability, water management and the respect of human and labour rights. Investments in a sustainable natural rubber chain have also the positive effect of decreasing the flight from rural areas and the development of infrastructures resulting into sustainable development. Finally, carbon capture is a significant – and positive – environmental spill over effect of growing rubber trees.

A similar reflection on the sustainability of synthetic rubber will be initiated in 2015.



CIRCULAR ECONOMY

In July 2014, the European Commission adopted the *Communication Towards a circular economy: a zero waste programme for Europe (COM(2014) 938)* to establish a common and coherent EU framework to promote the circular economy. According to the Communication, turning Europe into a more circular economy means boosting recycling and preventing the loss of valuable materials, creating jobs and economic growth, showing how new business models, eco design and industrial symbiosis can move us towards zero-waste, reducing greenhouse emissions and environmental impacts.

As part of the circular economy package, the Commission also adopted a legislative proposal to review recycling and other waste-related targets in the EU, including minimum requirements when developing and applying Extended Producer Responsibility (EPR).

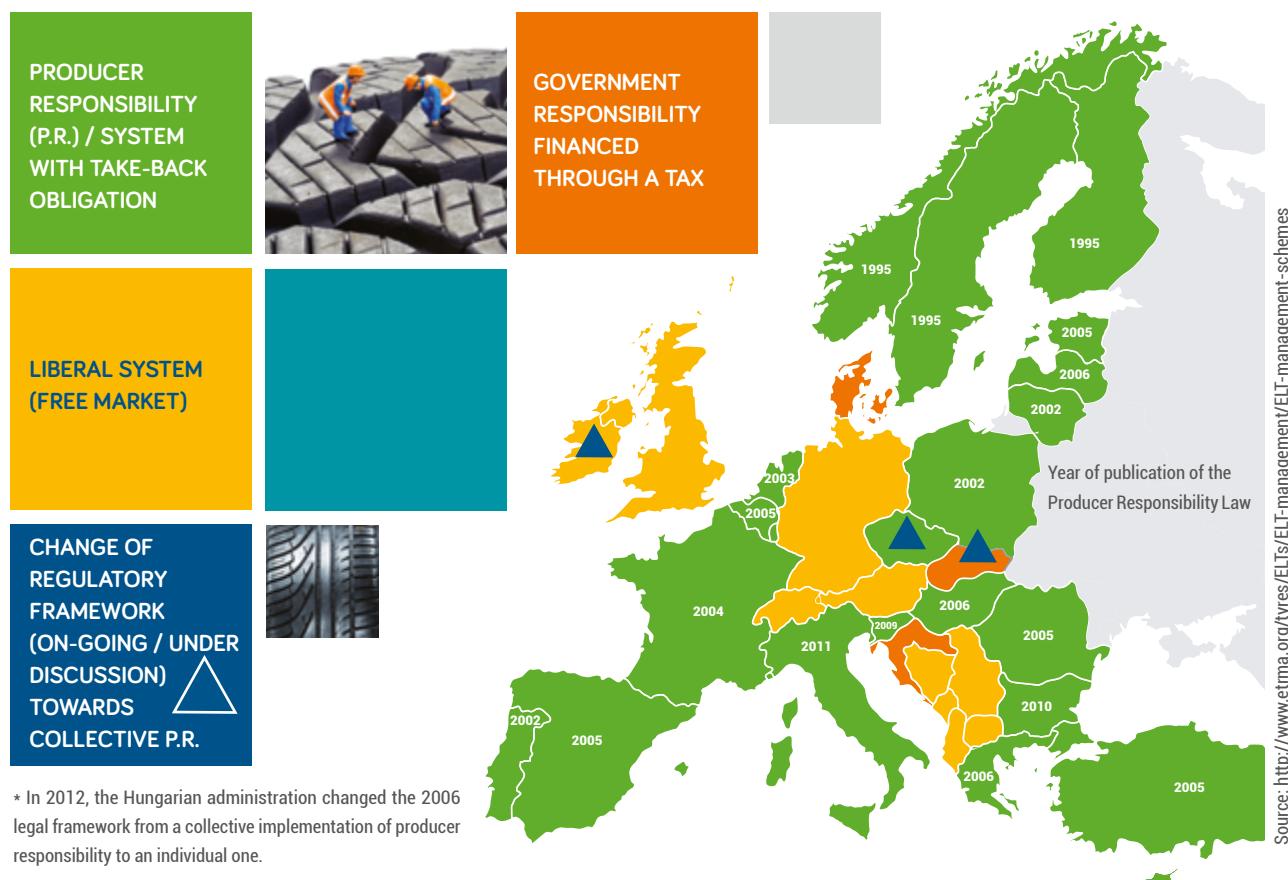
ETRMA welcomes the link made in the Communication with the Raw Materials EIP Stakeholder Commitments, which look at increasing resource productivity to the benefit of business and consumers alike.

The Package also includes new targets (see table on page 24) that could have a consequence on the sector. In particular, the proposal includes the following:

- Increase recycling/re-use of municipal waste to 70% in 2030;
- Phase out landfilling by 2025 for recyclable (including plastics, paper, metals, glass and bio-waste) waste in non hazardous waste landfills – corresponding to a maximum landfilling rate of 25%.

It is important for ETRMA that setting ambitious recycling targets for municipal waste needs to be accompanied by measures to create market outlets. Therefore, ETRMA strongly supports the commitment of the European Commission towards developing a guidance on the possibilities offered by the new public procurement

COUNTRY SPECIFIC IMPLEMENTATION AND ELT COMPANIES



directives in the field of Green Public Procurement (GPP) as this could help achieving the indicative 50% GPP target and the facilitation of the establishment of GPP networks among public authorities.

Finally, ETRMA supports the further promotion of the development of markets for high quality secondary raw materials, including through evaluating the added value of end-of-waste criteria for specific materials, including rubber.

ELT MANAGEMENT

In 2012, a little more than 3.4 million tonnes of used tyres were managed in an environmentally sound and economically viable manner in Europe (EU27, Norway, Switzerland & Turkey) corresponding to a used tyres treatment of 95%. This is a remarkable result, especially when compared with EU recovery rates for paper (71%) and plastics (62%).

Extended Producer Responsibility (EPR)

The Landfill Directive (1991/31/EC) which banned the landfilling of most end-of-life-tyres (ELTs) since 2006, places ELTs amongst the most obligated waste streams in Europe as no other waste stream has yet been applied a landfill ban.

During planning for the implementation of the Landfill Directive, the tyre industry initiated a strategic and self-promoted programme based on producer responsibility which was deployed by the members of ETRMA. This led to the gradual creation of national ELT management companies (ELTcos) backed by a proper statutory regime. As shown in the map on page 25, currently there are 19 countries with an ELT proactive producer responsibility regime and 14 operating collective ELT management companies set up at the initiative of tyre manufacturers, which means that used tyres under producer responsibility law account for about 65% of EU used tyres arisings (2012 data).

ELTs recovery routes

As shown in the graph on page 27, there are several ways in which the ELTs are treated in order to turn them into a resource.

Re-use, retreading and export

In 2012, the reuse of part-worn tyres (second-hand tyres, casings for retreading) declined by 1% to reach 653,000 tonnes¹ mainly due to retreading (-2%) and second hand tyres (-1%).

Material recovery

In 2012, within material recovery (1.34 million tonnes), recycling of ELT rubber granulates and powder was the main recovery route (83%), followed by the use of ELTs in civil engineering applications and public works (12%), as dock fenders and blasting mats (>2%), for pyrolysis (2.5%) and as a carbon substitute in steel mills and foundries (<1%).

¹ Perimeter for the annual comparison: EU27+NO+CH – Total figures including Turkey: 653.000 tonnes of PWTs



REVISION OF THE GREEN PUBLIC PROCUREMENT CRITERIA FOR ROAD CONSTRUCTION

➤ The work of the European Commission is based on a study by the Joint Research Centre's Institute for Prospective Technological Studies (JRC-IPTS) and on the requirements addressed in Commission's Communication "Public Procurement for a better Environment" (COM(2008) 400).

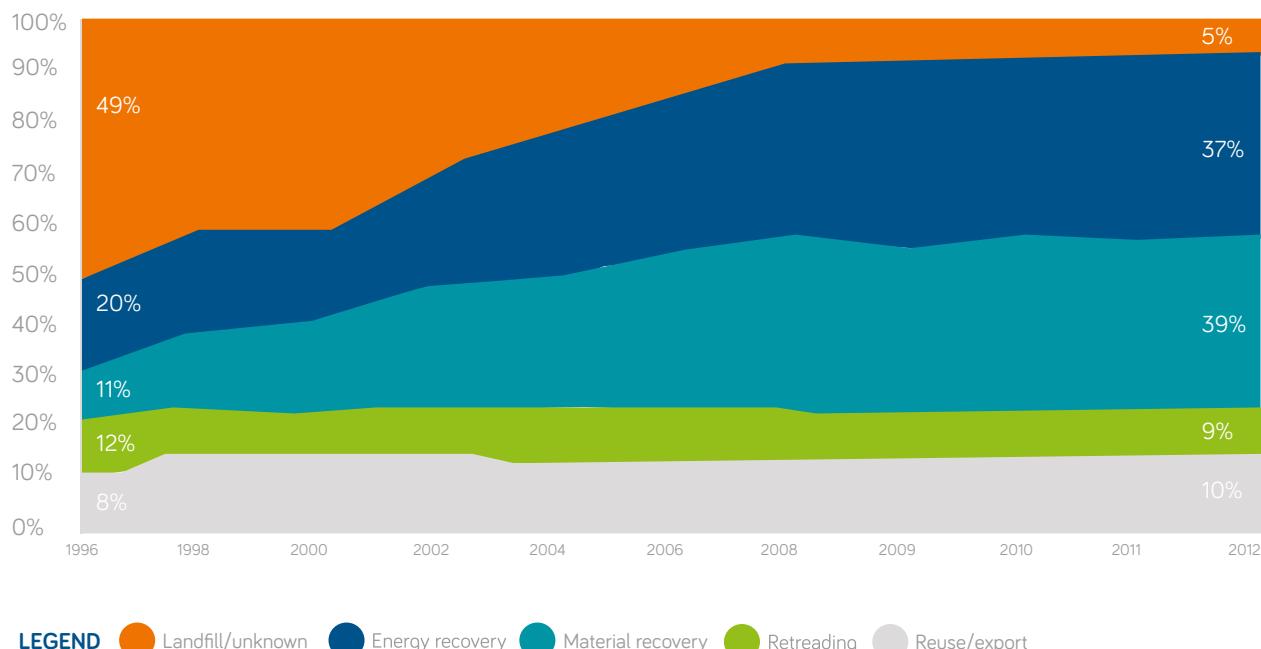
In order to inform those criteria, environmental, safety, technical and functional aspects will be considered like pavement-vehicle interaction (safety and rolling resistance), congestion, resource efficient construction (recycling, Warm Mix Asphalt) and noise emission.

ETRMA is part of the GPP on Road Construction Stakeholders Forum and is actively pursuing the positioning of rubberised asphalts among innovative & environmentally-friendly technologies for road construction that Member States should encourage through GPP action plans.

The GPP criteria are recommendations for the EU Member States, which can use them on a voluntary basis.



EU TREATMENT ROUTES FOR USED TYRES (1996-2012). SOURCE: ETRMA



LEGEND Landfill/unknown Energy recovery Material recovery Retreading Reuse/export

Preliminary trends for 2013, based on data from 14 ELTcos, show an 11% decrease of material recovery from 2012. Within material recovery, recycling of rubber granulates and powder remains the most important market (82%), end-of-life tyre use in civil engineering applications represented in 2013 11% of ELTs sent to material recovery. The volume of ELTs sent to granulation continues to fall (-10%) compared to the previous year due to declining demand for its main applications.

As far as ELT rubber granulates are concerned, available data² shows that the markets for ELT granulates are changing. Synthetic turf, which a few years ago accounted for about 50%, now represents only 26%. This fall was compensated by an increase in exports (21% vs. 7% in 2010), and in moulded objects and sport and children playgrounds (22% and 20% respectively vs. 17% and 15% in 2010). Another significant trend is the drop in asphalt and road paving applications (from 7% in 2010 to 1% in 2013) despite the many advantages rubberised asphalt proposes compared to conventional road paving solutions.

Reduced public investment in new infrastructures (sport surfaces, construction road maintenance, etc.) due to the economic downturn contributed to a situation of sluggish demand for ELT granulates on the EU market. Creating markets for secondary raw materials (recyclates) based on public procurement, amongst others, must be further promoted by the national authorities, as mentioned in the Circular Economy Communication (COM(2014)938). Since a precondition for recycling is the existence of a market for recycled materials and final products, there is a need to support and develop markets for ELT-derived products. Green public procurement should be more integrated in both national and EU-derived policies.

Energy Recovery

Of the 1.26 million tonnes of ELTs, the cement industry remained the main user of ELT shreds or whole tyres (91% in volume), whilst district heating and power plants absorbed the remainder. Preliminary trends for 2013, based on data from 14 ELTcos, show a 12% year-on-year increase in ELTs used in the cement industry, while, the quantities used for electricity generation dropped by 5%.

The use of ELTs in the cement industry should be rather defined as co-processing whereby the ELTs are partly

² Data from 4 ELTcos.

recycled in the clinker (substituting raw materials such as iron, silica and zinc) and partly used to substitute conventional fuel.

A research by Ecopneus – the main Italian ELTco – shows that the use of ELTs in cement kilns and for material recovery purposes are nearly on a par with regard to the environmental benefits: each tonne of ELT sent to material recovery avoids a greenhouse gas emission of 1.96t of CO₂eq vs. 1.62t of CO₂eq in cement kilns and 0.13t of CO₂eq when used for electricity production. This corroborates previous results from Aliapur (2010) and encourages the use of a portfolio of recovery technologies in order to fulfill ELT regulatory targets.

Emerging routes

Carbon substitution in the steel industry: ELT shreds are used in Electric Arc Furnace (EAF) steel making to partially substitute the use of coke, as an alternate carbon source. This route - used in Belgium, Luxembourg, Sweden and France - absorbed in 2013 7.000 tonnes of ELTs, an increase of 11% compared to the previous year.

Pyrolysis, thermolysis and gasification result in an anaerobic thermal decomposition which turns tyres into three product fractions: solid char, pyrolytic gas and

liquid pyrolysis oil with a typical product distribution of 40% char, 50% oil and 10% gas. The economic viability of this emerging recovery route is hampered by the fact that the quality, and prices of the obtained pyrolytic by-products often fail to justify the process costs. Despite the proliferation of new lab-scale reactor projects, the economic viability of industrial scale processes has yet to be demonstrated. Based on data from 14 ELTcos, about 15.000 tonnes of ELTs were used for pyrolysis in 2013, a year-on-year reduction of 25%.

Devulcanisation is a potential method of recycling ELT rubber. As its name implies, when subjected to mechanical or thermal stress or ultrasound radiation, the structure of the vulcanized ELT rubber is modified. The resulting material can be re-vulcanised or transformed into useful products. Ideally, devulcanisation would yield a product that could serve as a substitute for virgin rubber, both in terms of properties and in terms of cost of manufacture. However, and despite the efforts of the tyre industry, current use remains low because of its negative effect on rubber compound characteristics and performance.

International data

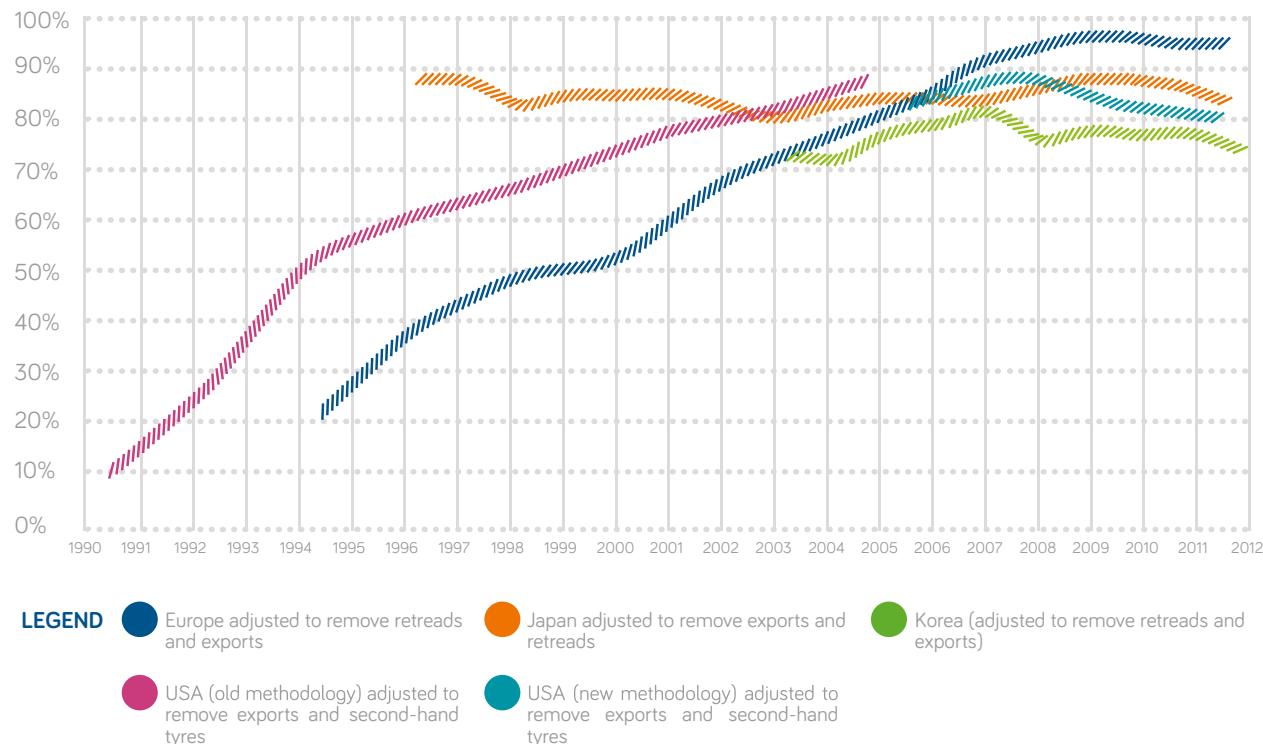
Globally, recovery rates for ELTs have also increased significantly, but recovery rates in the EU (above 90% since 2007) remain higher than any other analysed



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INTERNATIONAL DATA ON ELTs RECOVERY RATES



country, making Europe one of the most advanced regions in the world in terms of treating ELTs.

In WG1, CEN TS14243 was split in 4 parts (general aspects, granulates and powder, shreds, cuts and chips, steel wires & textile fibres) and progress was made in validating each element of the standard.

STANDARDS FOR IMPROVED ELT-DERIVED PRODUCT QUALITY

The ongoing development of quality standards for ELT derived materials at CEN level (TC366), together with the high ELT recycling and recovery performance achieved throughout Europe, is a major step towards obtaining the end of waste status for ELT-derived products. Furthermore, the development of EU standards contributes to a significant increase in the quality level of tyre-derived products while opening the market to new applications, promoting technology exchanges and access to know-how and innovation, and protecting the environment.

Further to the progress achieved in 2011 (establishment of the new CEN TC366), and 2012 with a business plan aiming at the validation and conversion of the CEN TS14243 into an EN standard, important progress was made in the four created WGs.

In WG2 (Physical properties of materials) and WG3 (Chemical composition of end-of-life tyres), members reviewed numerous test methods in both fields and proposed adapting some of the existing methods for the control of conventional rubber materials.

Exploratory work is ongoing in WG4 to establish a common framework to define which whole tyres can be recycled.

Finally, advances have been made in CEN TC 217 WG10 "Environmental aspects of sports surfaces" which has finalised a standard for controlling leachates from synthetic turf pitches.

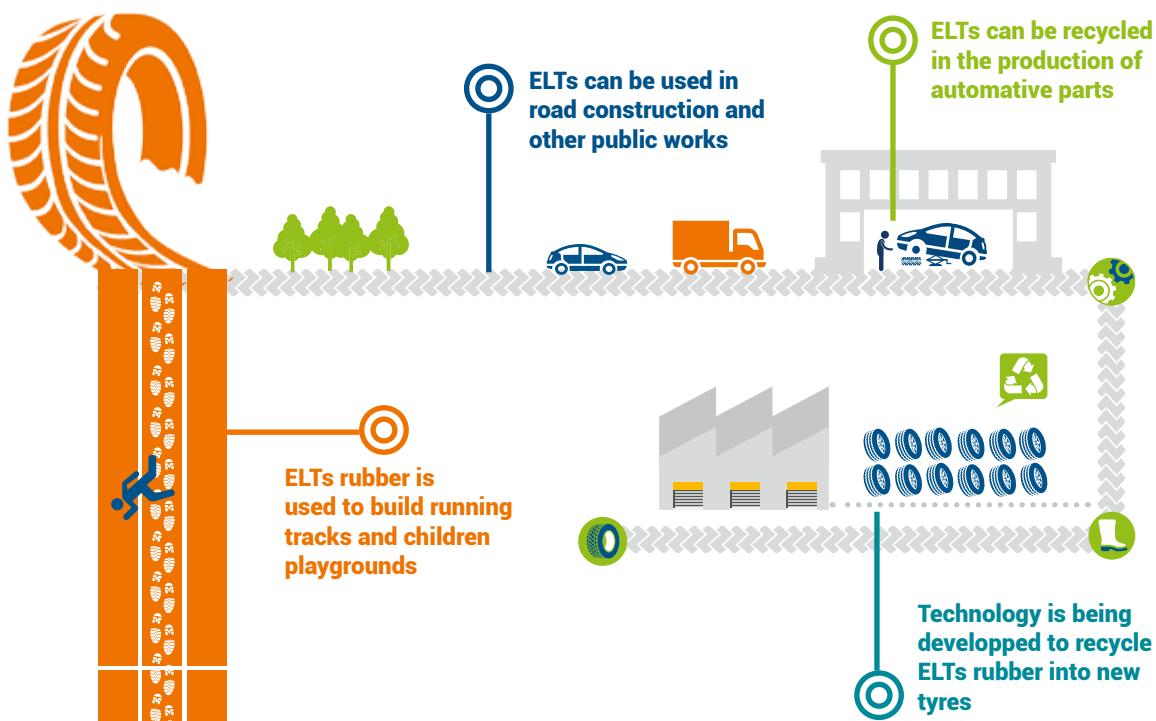
ETRMA is involved as Liaison in CEN TC366 and CEN TC217.



Granulates, powder and chips from tyres: a whole new product

Tyre collection and treatment still costs about €600 million annually, an extra cost which is mostly paid by consumers. The industry is mature enough to turn worn-out tyres into a true resource, effectively contributing to the EU resource efficiency roadmap and reducing the costs connected to collection. There is a potential of additional annual value of at least €1 bn. over the next decade but a major obstacle is the persisting qualification of the derived products of worn-out tyres as waste under the EU Waste Directive 2008/98/EC.

Granulates, powder and chips from ELTs can be used in a very wide number of applications, from running tracks to roads, from children playgrounds to the automotive industry. In 2012 about 1.1 million tonnes of ELT rubber were employed in this manner, but the real challenge is to turn further 650,000 tonnes of ELT granulates, powder and chips into a true resource. Establishing end-of-waste criteria would enhance the reliability and the status of compliant granulates/powder and chips as high-quality secondary raw material, reinforce their quality assurance, and strengthen consumer confidence in the product.



Recycling markets will benefit strongly from harmonised, EU-wide end-of-waste criteria, resulting in:

- creation of a true single market
- reduction of administrative burdens
- further professionalisation of the markets

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