BRIDGESTONE

PASSION for EXCELLENCE

Environmental Commitment and Performance

Bridgestone Europe | **2010**

It's not only what you make,
it's also **how you make it**

Makio Ohashi
CEO and President
Bridgestone Europe

Our 2010 Environmental Report is published at a particularly exciting time for Bridgestone Europe. We are preparing to implement the European tyre labelling regulation, which we view as a fresh opportunity to communicate with our customers about our product safety and environmental performances. We have also designed an innovative range of eco-friendly tyres for trucks and buses.

These initiatives reflect a long-standing corporate commitment to the pursuit of sustainability. It is a commitment that we share with Europe's consumers, and that complements their growing emphasis on environmentally sensitive factors, such as production facilities and the ecological aspect of tyres. Europe is one of the most eco-conscious, complex and technically advanced markets in the world. The forthcoming introduction of tyre labelling, to be completed in 2012 at the latest, will flag up some of the main characteristics of competing products. This will enable customers in the EU to make **informed purchasing decisions**.

While we are preparing to implement the regulation, we continue to look for new ways of upgrading the performances of all our tyres. **Our ECOPIA range for trucks and buses**, launched in September, draws on years of intense research and development dedicated to the production of tyres that combine extreme fuel efficiency with an outstanding safety record.

With this publication, we would like to provide our stakeholders with more information on these and all other key aspects of our environmental performance. We strive to fine-tune our products and our processes on an ongoing basis to consolidate our position among the best in our trade. From design and testing to procurement and manufacturing - in other words throughout all steps of the process - **it's not just what you make. It's also how you make it**.

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Bridgestone Europe HQ, Brussels, Belgium

Our environmental commitment

One common goal

We, the Bridgestone Group, are determined to support current and future generations as they strive to preserve the environment.

We aim to inspire ever higher levels of public trust and employee pride. Our dedication to health, safety and the environment resonates throughout all our business activities, as we work towards a sustainable society.

Two core strategies

To translate this mission statement into action, we have deployed **two core strategies** for eco-development. The first of these strategies, our **commitment to environmental communication**, reflects our desire to communicate openly and honestly about our shared environment. The second, our **emphasis on TEAMS**, our Total Environmental Advanced Management System, helps us to ensure that all our activities are geared to continual environmental improvement.

Three areas of environmental progress

Through the above-mentioned core strategies, we nurture and validate our dedication to greater **sustainability** in the three areas that are central to our business activity. We strive to improve our **products and services** on an ongoing basis, and so help our customers conserve natural resources. We fine-tune our **operations**, expressing our concern for the environment by selecting optimal raw materials, enhancing our production processes and deploying powerful logistics. And we volunteer time and resources for **community activities** dedicated to environmental and social improvements.

http://www.bridgestone.eu/corporate/environment/mission

Bridgestone Europe

- **European headquarters** in Brussels
- Around **13,500 staff** in 20 European countries
- Extensive research infrastructures in Italy: a major R&D and testing centre, and a state-of-the-art proving ground inaugurated in 2004
- **8 tyre manufacturing plants**
  France (1), Hungary (1), Italy (1), Poland (2) and Spain (3)
- **1 plant for the production of treads**
  for truck and bus tyres
- **6 retreading facilities**
- **2 intermediate product factories**
- **3 European logistics centres**
- **20 national sales companies**

Close to customers, **wherever they are**

The Bridgestone Group - the **world's largest** in its industry - produces **high-quality tyres and rubber products** for customers around the globe. We take great pride in the staff of over **138,000 employees** who embody this worldwide presence. Together, we run over 180 plants, 5 technical centres and 12 proving grounds, and market our products in more than 150 countries.

The Bridgestone Group companies operate under the guidance of their parent company, the Bridgestone Corporation, which is headquartered in Tokyo. Key regional divisions of the Group include Bridgestone Europe NV/SA and Bridgestone Americas Holding, Inc., which have built up extensive activities in their respective markets.

Bridgestone Europe develops, manufactures, tests and sells tyres both as original equipment to vehicle constructors and for the replacement market, and achieved a **turnover of EUR 2.7 billion** in 2009. Products are also exported outside Europe, for example to Japan.

Tyres account for 83% of the Bridgestone Group's sales, but our expertise extends beyond tyres to industrial rubber and chemical products, office equipment components, sporting goods and bicycles. The Group as a whole generated a turnover of **USD 28.2 billion in 2009.**

We view the global scope of our operations as a privilege and a responsibility. It enables us to assist communities on five continents as they strive for safer transport and greater sustainability. Their needs, their expectations and their trust inspire us to reach for new heights every day.

Bridgestone Technical Center, Rome, Italy

Eco-friendly, reliable tyres

Our customers rely on us to supply tyres that will contribute to a safe, enjoyable motoring experience. They value products that will maximise a car's ability to cope even with the heaviest rain, and that will allow for the precise, responsive handling and braking that are crucial when drivers are faced with an unexpected obstacle. We meet our customers' expectations by designing tyres with excellent grip.

Safety performances of a tyre such as **wet grip** are the **first priority** for Bridgestone, while tyres that help a vehicle to use less energy to move require different characteristics. Designing tyres that combine outstanding **safety** characteristics with high **fuel efficiency** has therefore traditionally involved a performance trade-off.

Technology enhances tradition…

This dilemma exemplifies the complex challenges involved in manufacturing truly exceptional tyres. Tyres have evolved into **high-tech components** where all aspects of production and design are scrutinised and optimised for best results. Bridgestone's engineers excel in this delicate art and seize every opportunity to improve on past successes.

Reconciling the conflicting requirements of road safety and sustainability ranks highly among our R&D objectives. Our latest achievements in this area include the **NanoPro-Tech™** technology, which optimises the distribution of fillers in the compound used to produce the tyre and reduces the friction of the molecules.

This process helps to limit rolling resistance without compromising continuous improvement in safety. Technological advances such as these consolidate our long tradition of excellence in tyre manufacturing and boost our ability to design reliable, eco-friendly products.

…transparency enhances trust.

Consumers in the European Union will soon be able to ascertain the environmental and safety performance of new tyres at a glance. Standardised **tyre labelling**, to be introduced by the end of **2012**, will require tyres to be **graded for wet grip**, **fuel efficiency and** exterior **noise**. Bridgestone welcomes this initiative, which will provide motorists and the automotive industry with some of the key information required to compare products.

Comprehensive information on the European tyre labelling regulation is available at **http://www.bridgestone.eu/tyres/eu-tyre-labelling**

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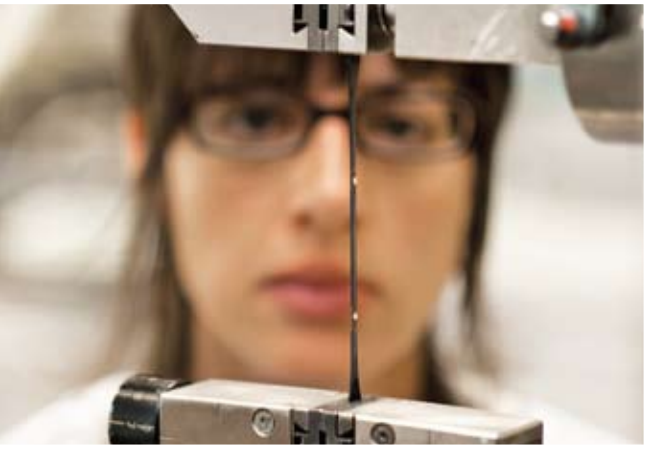
1 | Wet grip: one of our priorities
2 | Tyres: high-tech products
3 | Tyre labelling in the EU: compulsory from 1 November 2012



Testing and quality control, a key requirement at all stages

A systematic approach to **eco-design**

To ensure that **sustainability** is taken into account at all stages of tyre design and production, Bridgestone has implemented processes that place environmental considerations firmly at the centre of its activities.

All tyres produced by Bridgestone Europe are manufactured by plants which run annual environmental programmes and which are certified according to the **ISO 14001** standard. This standard issued by the International Organisation for Standardisation sets out stringent requirements for the environmental management systems that support the implementation of an organisation's environmental policies and programmes.

Analysing the life cycle of a tyre…

In 2002, Bridgestone's Technical Center Europe launched a Product-Oriented Environmental Management System **(POEMS)** to fine-tune the design of its tyres. The system has received ISO 14001 certification and is verified every six months to confirm that it remains geared to compliance and continuous improvement of environmental product performance. It is simple, flexible and effective.

The POEMS process began with an analysis of the environmental impact of a representative passenger car tyre throughout its entire life cycle. This **Life Cycle Assessment (LCA)** was performed in 2001 in the wider framework of the European Tyre and Rubber Manufacturers' Association (ETRMA). It examined resource usage and emissions at all stages, from raw materials extraction and manufacturing through transportation and distribution to use, re-use, maintenance and recycling or final disposal.

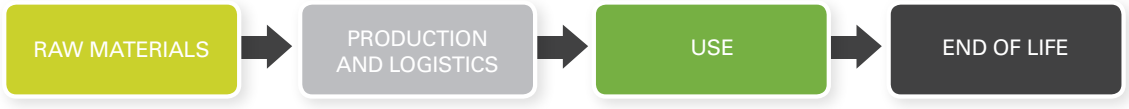
…for the purposes of product-oriented environmental management

The LCA revealed that the **environmental impact** of tyres depends primarily on **product design and usage**. Following on from this initial analysis, POEMS has been deployed to pilot analyses of the various design features that affect the environmental parameters of tyre use. These include the implications of material selection and tyre geometry on external noise, rolling resistance and wear. POEMS guides all our processes. It ensures that the environmental impact of our tyres is reliably controlled at all stages of product design.

Four life cycle stages,
four opportunities to make a difference

The **use phase** accounts for no less than **84% of the environmental impact of a tyre**. Bridgestone strives to limit the impact of its products at all life cycle stages, but the data suggest that the use stage offers the greatest scope for significant reductions. By comparison, the end-of-life stage represents just 3% of the total environmental impact.

The life cycle stages

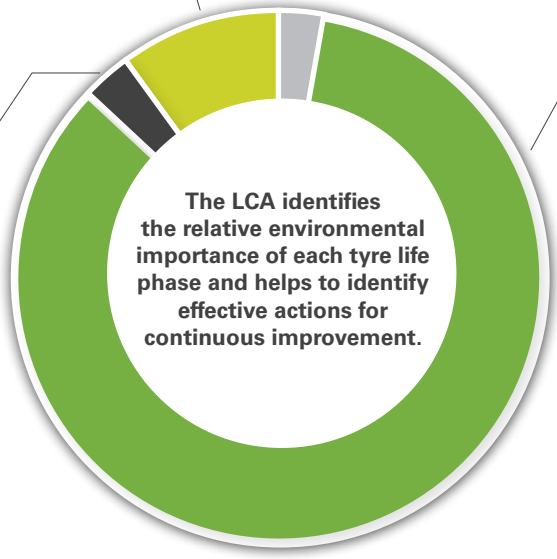


10%

Impact of tyre raw materials
Greater eco-friendliness at this stage depends on the choice of ingredients and the degree of environmental awareness throughout the supply chain.

3%

Impact of tyre production
Improvements in Bridgestone's manufacturing processes are continuously reducing the environmental load at the factory stage.



84%

Impact of tyre use
Bridgestone has developed special **technologies** to minimise the impact of tyre use without sacrificing continuous improvement in **safety performance**. Motorists also play a central role at this stage, as they can achieve drastic reductions through regular **tyre maintenance and appropriate driving behaviour**.

3%

Impact of end-of-life tyres
The responsible involvement of consumers, dealers, manufacturers, waste transporters and recyclers is crucial at this stage and helps to promote new uses for old tyres.

The full text of the European tyre LCA study is available upon request. Please do not hesitate to contact us for a copy by writing to: **environment@bridgestone.eu**

Our environmental performance

At Bridgestone, we have been producing tyres for nearly **80 years**. We look back on this long tradition with gratitude for the trust of our customers and for the dedication and ingenuity of our staff. Generations of Bridgestone employees have helped to keep our products ahead of the curve since 1931. We hope that future generations of Bridgestone colleagues will look back on our shared history with the same sense of continuity and pride.

It follows that we assess our products both in terms of their technical performance and in terms of their impact on the environment. Building on the tyre life cycle analysis, we have launched ambitious, **comprehensive initiatives to limit their ecological impact through**:

- → **a sophisticated selection of materials**
- → **optimised production processes**
- → **advanced technologies for eco-friendly tyre use**
- → **new uses for old tyres**

Gianluca Tosatti

European Regulations and Environmental Affairs Manager
Bridgestone Technical Center Europe, Rome

"The European tyre industry is currently going through **major changes** at all business operations stages: material procurement, production and product design.

We have phased out highly aromatic oils, and we have implemented accurate processes to ensure that our **material supply chain** complies with the recent European regulations on chemicals (CLP, REACH*). At the tyre manufacturing stage, we continue to **reduce our carbon footprint**, an initiative which also ties in with the forthcoming European CO_2 reduction targets. And we are preparing for the implementation of the new EU regulations **relating to minimum tyre performance requirements** and **tyre labelling.**

The introduction of labelling is in itself an epic change. By the end of **November 2012**, passenger car tyres and many types of truck tyres sold in Europe will have to be **labelled**. The labels will enable tyre manufacturers to **rate** their products for three of the key performance indicators: **fuel efficiency, wet grip and exterior noise**.

Reliable labelling will help consumers to make informed choices, and it will be an opportunity for Europe's tyre manufacturers to showcase some of the key features of their products. Tyre manufacturers can anticipate the labelling on a voluntary basis before it becomes mandatory.

Preparing for the introduction of the labels has involved a company-wide effort. It is not just a matter of printing the label, but also of aligning our testing and knowledge management processes with the specificities of the new regulation. This also requires the development of training procedures and the involvement of many functions, from design to logistics to process control through to the dealer network and our partners. **Every function in the company has been involved and has contributed to this**.

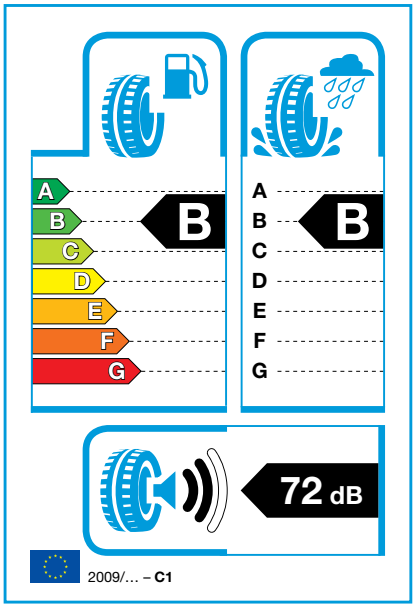
Bridgestone has invested in systems and processes that will ensure that our labels are fully **reliable**. Sample checks by the authorities are planned, and we are in favour of any further controls aiming to promote an effective implementation of labelling throughout the sector.

We promote continuous improvement, at all stages of the life cycle. We rely on our staff to translate this policy into daily action, and we have developed powerful systems to support them in this process. Bridgestone's Technical Center in Rome is a key driver of innovation throughout our European operations.

Wet grip, fuel efficiency and exterior noise are not the only parameters that define the quality of a tyre. At the Technical Center, we are just as interested in other aspects - **aquaplaning, dry grip, handling control, interior noise, wear resistance and so forth**. While there will certainly be a particular interest in the label performances, we will continue with our goal **to improve the performance of our tyres across the board**. We have hundreds of engineers developing new materials, new designs, new tread shapes every day. They are involved in a number of programmes focusing on environmental, safety or supply chain aspects."

* The EU regulations on Classification, Labelling and Packaging (CLP) and on the Registration, Evaluation, Authorisation and Restriction of Chemical substances (REACH).

EU Tyre Labelling Regulation

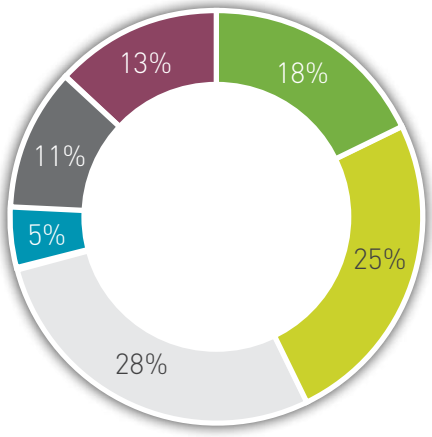


"The labels will enable tyre manufacturers to rate their products for three key performance indicators: fuel efficiency, wet grip and exterior noise."

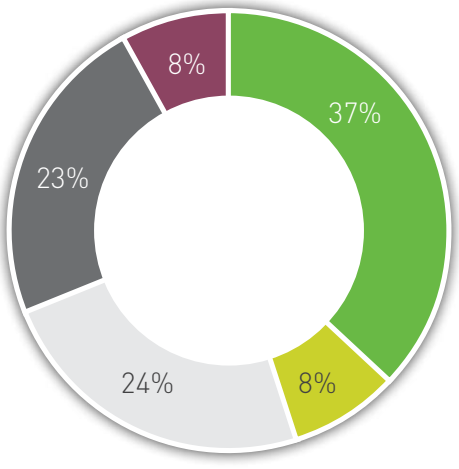
A sophisticated selection of materials

Key ingredients

Tyres consist primarily of **synthetic and natural rubber**. Other materials are added to improve performance, durability and safety. Processing transforms these substances into a new material - the vulcanised rubber compound from which tyres are mainly made.



Passenger car tyre*



Truck and bus tyre**

Natural rubber

With its unique elastic properties, the sap of the **rubber tree** remains an essential element of a tyre. Truck tyres contain even more of this key ingredient than passenger car tyres.

Synthetic rubber

Usually produced from **petroleum or natural gas**, synthetic rubber is added to natural rubber to achieve the desired **elasticity**.

Fillers

Carbon black and silica are widely used to provide the necessary **structure** to the compound.

Textile

In passenger car tyres, **rayon or polyester cords** are radially disposed along the carcass ("radial tyre"), while **nylon cords** are placed under the tread or near the bead area.

Steel

High-strength steel cords are applied under the **tread** of passenger car tyres and in the **carcass** of truck tyres, while other steel wires are located near the **bead to** assure adherence to the rim.

Other chemicals

Other chemicals, such as **oils, sulphur and zinc oxide,** have various functions. Anti-degradants are used to protect the compound.

* Source: Average LCA data, ETRMA 2001
** Source: Bridgestone Technical Center 2009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1 Reinforcing materials: steel and textile cords
2 Natural and synthetic elastomers
3 Carbon black
4 Wax, stearic acid and resins

Promoting awareness throughout the supply chain

Bridgestone Europe relies on in-house supply capabilities for a part of its natural rubber, synthetic rubber, carbon black and steel cord. This part of the supply chain is, therefore, covered by internal environmental protection arrangements.

Environmental considerations also rank highly among the criteria we apply when choosing suppliers, with **ISO 14001-certified suppliers** benefiting from a selection advantage. Our suppliers' compliance with legal and other requirements is verified.

Using reclaimed materials

Reduce, re-use, recycle - Bridgestone has adopted a range of **waste reduction initiatives** as part of a wider effort to limit its ecological footprint. Most of the zinc oxide used in tyres is made from recycled zinc, for example. Other relevant recycled materials include crumb rubber, a substance generated by crushing the waste rubber of used tyres.

However, a high proportion of recycled rubber tends to translate into a **loss of** chemical reaction in the compound, increasing tyre wear and rolling resistance and consequently reducing service life and fuel efficiency. The limited and unstable supply of high-quality crumb rubber adds another layer of complexity. Bridgestone uses post-consumer recycled tyre material in all its tyre lines, but limits the crumb rubber content to small amounts that cannot affect the quality of the product.

Investing in innovation

Bridgestone's Technical Center Europe develops and upgrades compounds and reinforcing materials in order **to enhance the on-road performance and the sustainability of our tyres**. The use of innovative chemicals in this process is tightly **controlled** to ensure that these substances meet the various environmental and legal requirements. All design choices are assessed in terms of their impact throughout the entire life cycle of the product.

Optimised production processes

Tangible results

Our Group's concern for the environment has triggered a series of profound changes at Bridgestone Europe. With the help of our environmental management system, we have implemented **a range of projects and programmes to boost the environmental sustainability of our operation**.

The starting point for these initiatives was a detailed analysis of the environmental aspects of our production. This analysis enabled us to pinpoint aspects with a significant impact on the environment and adopt internal procedures to control them. All Bridgestone Europe tyre plants are **ISO 14001:2004** certified, and our environmental improvement programmes are carried out and verified within the framework of this standard.

The table below documents the evolution of key environmental indicators linked to our manufacturing processes, highlighting the **improvements** we have achieved since this process was launched. **The data represent production efficiency in terms of input or output per ton of tyres.**

We monitor these indicators carefully, and we continue to seek out new opportunities to refine our environmental performance.

Ratio (divided by production volume)

	Water consumption [m^3/ton]	Solvent consumption [kg/ton]	Waste generated [kg/ton]	Energy usage [Giga Joule (GJ)/ ton]
2003	9.0	7.4	57	9.7
2004	8.4	6.6	55	9.4
2005	6.8	5.4	52	9.1
2006	6.3	4.0	49	8.9
2007	5.7	3.2	46	8.5
2008	6.2*	3.0	51*	8.7*
2009	6.0*	2.4	57*	10.3*

Source: Bridgestone Technical Center Europe

* Being related to production volume, the figures for 2008 and 2009 reflect the effects of an industry-wide slowdown and the opening of new factories and production lines, which affected environmental efficiency during the start-up phase. Bridgestone Europe has launched environmental improvement programmes with the aim of exceeding the excellent results for 2007 in the shortest possible timeframe.

Constant efforts are made to reduce the carbon footprint of our tyres.

Saving energy

We attach great importance to the **efficient management and rational use of energy**, and the fact that we have nearly halved the amount of energy used to produce our tyres shows that our efforts are meeting their mark. We expect to use approximately **9.4 GJ** to manufacture a ton of tyres in 2010, compared to **17 GJ** in 1990. Our efforts to save energy have enabled us to reduce our emissions of greenhouse gases dramatically over the years. Key technological and organisational improvements include the introduction of cogeneration facilities producing energy and heat from a common fuel source.

Reducing water consumption

Bridgestone Europe is keenly aware of the need to conserve water, one of the world's most **precious** resources. By 2009, water consumption per ton of tyres produced by our plants had **decreased to two-thirds** of the amount used in 2003, reaching very low figures for this type of product. We obtain no more than 13% of our water intake from deep wells.

Reassessing waste

Despite our best efforts, our manufacturing processes generate various types of waste – such as out-of-spec rubber, textile and metallic wastes, vulcanised tyres, raw material packaging, dust from indoor testing and trimming and wood from pallets. We strive to put such waste materials to good use. In 2009, Bridgestone Europe had reached a level of **64.4%** of industrial wastes sent to **recycling** or used to **generate heat**.

Limiting VOC emissions

The **Volatile Organic Compounds** (VOCs) involved in rubber processing are associated with the evaporation of solvents.
To reduce our emissions of VOCs, we have invested in technologies that enable us to cut back on the use of these solvents.
This programme was launched in order to meet and exceed the requirements of the relevant European Directive (1999/13/EC).
It has enabled Bridgestone Europe's plants to **limit VOC** emissions to an average of **2.4 kg** per ton of tyres in 2009.

Minimising the warehousing of chemicals

Our tyre plants have successfully implemented a **storage optimisation programme** for a range of chemicals targeted by EU regulations. EU Directive 2003/105/EC calls for stringent accident prevention and control measures for factories storing certain levels of these chemicals, setting even tighter limits than earlier EU legislation. It provided additional momentum to Bridgestone Europe's ongoing drive to ensure the **safety** of its staff, its customers and its global neighbours.

A tyre's rolling resistance determines its carbon footprint.

Advanced technologies for eco-friendly tyre use

How can a tyre help to reduce fuel consumption?

There is far more to a tyre than meets the eye. Every component, every design feature, every step of the manufacturing process is likely to affect the **performance** and the **characteristics** of the final product. Our detailed understanding of these diverse aspects and of their complex interactions enables us to engineer tyres for specific purposes and requirements.

Through a combination of advanced design features…

The contribution to **vehicle fuel efficiency** is a key consideration for all our tyres. This parameter is also directly linked to **rolling resistance**, the phenomenon by which the deformation of a rotating tyre leads to heat build-up in the compound, and thus to **a loss of energy**. **The higher the rolling resistance, the more energy is needed to rotate the tyre**.

Bridgestone's **NanoPro-Tech™** technology represents a breakthrough in tyre design. It optimises the distribution of fillers in the compound, **reducing the friction** of the molecules and the associated **energy losses**. As an added bonus, it also significantly improves **wet grip**. It is the latest in a succession of technological advances that enable us to supply products designed to keep our customers safe while reducing their petrol bills.

Proper tyre maintenance is crucial.

The Ecopia range combines safety and fuel efficiency.

…that translate into low rolling resistance

Reduced rolling resistance means reduced vehicle fuel consumption, all other aspects being equal. It is, however, just **one of many factors** involved. Others, such as vehicle aerodynamics, largely depend on the design of the car. Many more relate to operating parameters, such as vehicle and tyre maintenance standards, driving style and a range of variables which include speed, route and load, as well as weather and road surface.

Among the long list of parameters that affect fuel efficiency, many are within the **consumer's direct control**. Simple gestures, such as **keeping tyres properly inflated** and adopting an **economical driving style**, enable motorists to save on fuel. They also contribute to greater road safety and help to protect the environment.

Towards a greener future with Bridgestone's Ecopia tyres

Bridgestone's flagship brand for cleaner transport takes motorists one step closer **to "ecological utopia". Ecopia** tyres combine advanced features such as innovative compound technology and optimised tread patterns to help to **reduce vehicle emissions**, while offering the **high-level safety** of our premium tyres.

With the **Ecopia range**, Bridgestone has been at the forefront of environmentally aware innovation for many years. Ecopia tyres were first used in electric cars in Japan **in 1991**. Building on this promising start, they made their mark in Europe in 1999 when the Ecopia B381 was fitted to the Volkswagen Lupo 3L, which was widely considered to be the most eco-friendly car of its time. Ecopia tyres for passenger cars have been available in **Europe** since 2009.

ECOPIA

ECOPIA. Reduce your

Products for passenger cars

Turanza ER300 Ecopia

Our **Turanza** range is optimised to provide a **smooth drive** with maximum **comfort** on long journeys. Motorists opting for Turanza tyres with the Ecopia mark benefit from all the advantages of a high-performance tyre constructed for complete control, superior driving comfort and optimal fuel efficiency.

We introduced this premium range in April 2009 to meet **industry demand for low rolling resistance** combined with outstanding safety performance. It has since been fitted to several top-end touring car models as **original equipment**.

Ecopia EP150

The **Ecopia EP150 tyre**, launched in late 2009, was formulated for **small and medium-sized cars**. With an advanced **NanoPro-Tech™** compound, this model provides much **lower rolling resistance** than other Bridgestone tyres of similar dimensions - **without sacrificing safety**.

As a result, compared to other Bridgestone tyres of the same dimension, it is **around 3% more fuel efficient**, enabling car owners to cut carbon emissions and reduce their environmental footprint. The precise gain in fuel efficiency depends on a range of factors, including vehicle type and driving cycle.

Full information on Ecopia tyres is available at: www.ecopia.eu

Ecopia: Eco-friendly tyres for cars, trucks and buses

ecological tyre print.

Products for trucks and buses

Fuel represents approximately **21%** of commercial fleet **operating costs** in Europe. It is a much heavier expense than the acquisition of tyres, which averages at **2%**. A tyre with **low rolling resistance** and a **long service life** can help fleet operators to **cut** their fleet's **carbon emissions** considerably. It also enables them to make substantial **savings**.

Bridgestone Ecopia tyres are specifically designed for reduced ecological impact, and they are now also available for trucks and buses in Europe. Unveiled at the IAA motor show in Hanover in September 2010, the new product line-up marks a milestone for our European operations. It features **5 patterns: for steer use R249 Ecopia and R249 EVO Ecopia, for drive use M749 Ecopia and Greatec M709 Ecopia, and for trailer use R109 Ecopia**. Overall, 20 sizes are available for the above 5 new tyres and 6 sizes for the 2 retread patterns, M749 Ecopia and R109 Ecopia.

The range draws on **innovative compound technology** and advanced design features to provide customers with solutions that will enable them to reduce their operating costs. And, to assist customers who would like our help to ensure that their Ecopia tyres will perform optimally throughout their total tyre life, we have developed a **product-and-service package** including extensive **tyre maintenance** and **wear-life support**.

Fuel efficient

Major reductions in rolling resistance were achieved thanks to a cap and sidewall **compound**. The use of **NanoPro-Tech™** technology, **Low Energy Patterns** and a **Slim Bead design** further enhances energy efficiency for several models in the Ecopia range.

Reliable

We don't compromise on safety and performances. The superior grip, precise handling and outstanding braking performances of Ecopia tyres are similar to those of Bridgestone's previous line-up.

Durable

All Bridgestone products are built to last, and the Ecopia range features the same durability. Advanced design features **boost the longevity** of the casing, pre-empt irregular wear or facilitate stone ejection. The durability of our tyres increases the scope for eventual **retreading**, a further contribution to **eco-friendlier transport**.

Quiet

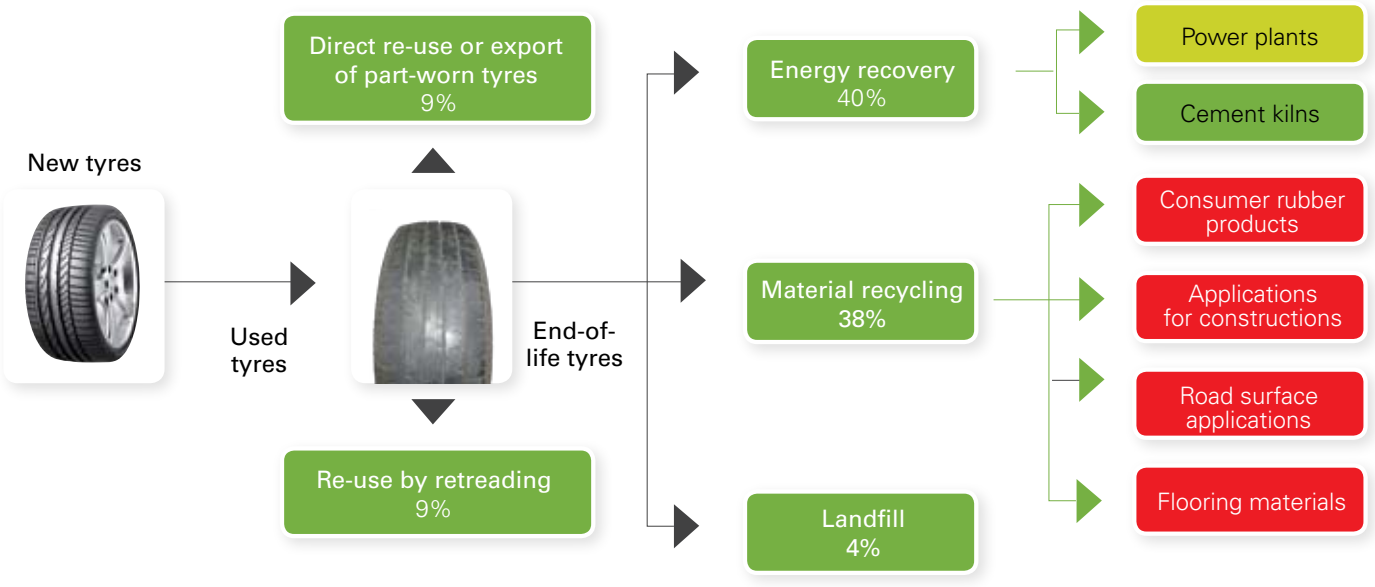
Tyres engineered for a healthier environment will also reflect efforts to **control rolling noise**. Specialised features such as groove fences help to keep the noise levels down, both inside and outside the vehicle.

M749 Ecopia

R249 Ecopia

New uses for old tyres

Old tyres are a **valuable resource**. Some may still be fit for service or suitable for retreading. Others may no longer be roadworthy, but many of their components can be reclaimed for **other applications**. Alternatively, they can be used as **fuel** to produce power or for other applications.



Source: ETRMA 2009 data (issued July 2010)

Retreading: unleash the full potential of your tyre

Often, all a worn-out tyre needs is a **fresh tread**. Retreading, the process by which **new treads are vulcanised to old tyres**, enables manufacturers to recondition serviceable tyres and to give them a **second or even a third life**.

Just like new tyres, retread tyres are manufactured to **high standards**; they are **reliable** and provide similar performances. Retreading already provides 40% of the tyres fitted in the European transport market, and nearly all of the aircraft tyres used by the major airlines. It is a cornerstone of our total fleet management solutions and greatly helps to drive down the costs per kilometre by extending total tyre life.

Retreading also represents a step towards **greater sustainability**. The process requires no **more than a third of the oil and of the energy needed to manufacture a new tyre**. It also **extends the service life of the tyre**, reducing the need for recycling or final disposal.

Quality matters

At Bridgestone, we approach retreading with the same passion for excellence as the design and manufacturing of new tyres. We sell retreaded truck and bus tyres under the **Bridgestone and Bandag brand names**, and we use premium compound and leading-edge process technology to ensure that our retreads closely replicate the features and performances of our new tyres. Tyres, retreaded or new, should **never compromise on quality**.

BRIDGESTONE

Bandag

Energy recovery

Tyres are used as a **low-cost alternative fuel for** cement plant furnaces, thermal power stations and incineration units.

Material recycling

Whole tyres are primarily used in **civil engineering** applications such as coastal protection, erosion barriers, artificial reefs or slope stabilisation, road embankments, sound barriers and insulation.

Shredded tyres are notably used as **foundation for roads and railways**, as a draining material replacement for sand and gravels, for landfill construction and embankments, as backfill for walls and bridges, and as subgrade insulation for roads.

Crumb and powdered rubber are used to manufacture moulded objects, **sports facility** and games area flooring, flexible parts for the car industry, noise barriers, road signs and accessories, roofing materials and camping equipment, for example. They can also improve road surfaces, where they can help to reduce driving noise and aquaplaning risks and extend service life.

Landfill

Landfill disposal of tyres having a diameter of **less than 1.4 m is prohibited** in Europe, both for whole tyres and for shredded tyres. This interdiction was introduced by the European Landfill Directive (1999/31/EC), respectively in July 2003 and July 2006. It has produced spectacular results: the proportion of tyres of all diameters sent to landfill in Europe has dropped from **62%** in 1984 to **4%** in 2009.

Retreading, recycling, energy recovery - old tyres can always be put to good use.

Management of end-of-life tyres in the EU

All European Member States have their own way of dealing with end-of-life tyres (ELTs). Approaches vary depending on the country's legal framework, but three types of system prevail:

1) **Producer responsibility**: the **tyre producer** collects and organises recovery and recycling;
2) **Liberal system**: dealers select an **authorised waste collection company** to deliver ELTs to recovery/recycling;
3) **Government** responsibility: the **authorities** organise ELT collection and treatment and finance this system through a tax.

Bridgestone Europe takes an **active** role in ELT management in all countries where it sells tyres. It is a founding member of ELT management joint companies in all countries which assign the responsibility to the producers. Where other systems apply, we promote responsible tyre disposal through local partnerships and industry associations.

Please contact us for more information at: environment@bridgestone.eu or download the European Industry ELT Report at: **http://www.etrma.org**

Informing motorists about the importance of proper tyre maintenance - for their own safety, and for the environment

Our environmental initiatives

Bridgestone's global environmental policy extends well beyond the standard corporate framework. We foster **ecological awareness** within our Group, and we engage with people and organisations around the world to promote the **responsible use** of our products.

Our principle **"One team, one planet"** says it all. We want to play an active role in society, and we want to contribute to a more sustainable world - for the benefit of future generations everywhere.

The power of dialogue

As a company with a worldwide presence, we have many opportunities to interact with local communities on several continents. This enables us to share information about the **environmental aspects** of our industry and to support initiatives at regional, national and international level.

We are, for example, involved in a range of **tyre safety programmes**. Simple tyre care actions can enable drivers to **reduce the risk of accidents and to limit the ecological impact** of their journeys in the process. To help spread the word, we have performed more than **160,000 tyre safety checks on vehicles across Europe since 2005**.

These checks, offered free of charge to motorists at car parks and shopping centres, confirmed the need for urgent action. They revealed that **8 out of 10 inspected vehicles showed tyre pressure or wear problems**.

Under-inflation does not only raise the risk of serious accidents, it also **increases rolling resistance and erodes fuel efficiency**. Based on our findings in 2009, we estimate **that inadequate tyre care in Western Europe wastes EUR 5.2 billion in fuel and adds 9.3 million tons of CO_2 per year**.

Our tyre check activities are performed by volunteers, reflecting our staff's dedication to dialogue with the wider community. We rely on our local Bridgestone teams to translate our environmental commitment into action.

Our factory in Burgos has set up a particularly comprehensive programme. This involves extensive in-house initiatives as well as various high-profile community activities, including:

- Burgos **Environment Month**, launched in 2008 with a full course of events, conferences and debates exploring sustainability issues;
- The **Environment Semester**, initiated by Bridgestone in cooperation with other companies, local authorities and academic institutions to promote recreational and cultural activities as well as cross-company visits;
- Writing and photography **contests** in the context of Bridgestone's campaign to save water and energy;
- A **tree-planting project**;
- A bicycle ride which has quickly matured into an annual tradition dedicated to sustainable urban transport.

Marta Pérez

Environment Coordinator,
Burgos Plant

"In Burgos, we launched various activities to raise awareness of environmental issues among our staff. But we wanted to take this programme to another level by opening it up to the local community. **We think it is really important to involve everybody, because we can't create a common environmental project, involving the region's companies, the university and local government etc. unless we do."**

"Awareness does make a difference. In our plant, we are always working on preserving natural resources such as water and energy. Last year, for example, we set a target to reduce water consumption. The results were even better than expected, due to a combination of employee involvement and infrastructure investments. **We reduced consumption by 50%."**

"I hope we will be able to take these activities another step ahead every year. They are really interesting and useful for our colleagues and for the community."

Contacts

If you wish to contact Bridgestone Europe for information, comments or suggestions about its environmental activities, please send your messages to:

environment@bridgestone.eu

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