

## **Press Kit**

# **MICHELIN introduces a comprehensive solution that saves much more than just fuel**

*Michelin tires deliver balanced performance  
to meet the needs of the trucking industry*

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## **Michelin provides a comprehensive response to the major challenges facing the trucking industry**

One figure says it all. In 2009, road transport of merchandise in Europe declined by 10% compared with the previous year. This fact was revealed in a study published by Eurostat, the EU statistics bureau, on July 20, 2010. More precisely, in the 27 countries in the European Union and the European Free Trade Association (Norway, Switzerland, Iceland and Liechtenstein), road transport of merchandise, expressed in millions of tonnes per kilometer decreased from 1,553,916 in 2008 to 1,394,223 in 2009<sup>1</sup>.

Highly detailed information on the extent of this decline is provided by studies conducted in Germany, a country that serves as a crossroads between Western, Northern, Eastern and Southern Europe and through which a very large amount of traffic transits. In 2009, domestic road transport of merchandise carried by German trucks fell by 7.2% to 245.6 billion tonnes per kilometer. International truck transport through Germany saw an even more dramatic decline than for domestic transport, falling 16.1% for exports and 20.3% for imports. Overall, transit transport declined by 27.2%<sup>2</sup>. In short, trucks are being driven less – and even less over long distances.

This decline reflects the problems that trucking companies face following the economic and financial crises. In this challenging environment, Michelin is providing a comprehensive solution to the major challenges that currently confront the trucking industry.

Truckers have expressed two overriding concerns – fleet reliability and cost management. These concerns were revealed in a study entitled *Truck Tire Users and the Environment*. Conducted by GMV, an independent organization, and published last July, the study covered 739 transport companies in five European countries – France, Germany, Spain, Turkey and the United Kingdom.

- 1) Truckers' main concern is to ensure the viability of their business through vehicle reliability (important or very important for 97% of respondents). This enables them to protect the merchandise carried (92%) and meet their customers' requirements (95%).
- 2) Their second concern is to reduce costs. In all, 95% of the respondents say it is important or very important to reduce fuel consumption as well as maintenance and repair budgets.

**With the presentation of its extended MICHELIN X® ENERGY™ SAVERGREEN lineup** at the 63rd IAA Commercial Vehicles Show in Hanover, Michelin is unveiling the first comprehensive solution that reduces fuel consumption by 1.7 liter per 100 km compared to other major tire brands<sup>3</sup> while also meeting the key expectations of European trucking companies.

Michelin is the first tire maker to deploy an integrated three-part strategy for the new range of **MICHELIN X® ENERGY™ SAVERGREEN** tires, which is also the first Michelin line-up capable of equipping all five truck axles. Innovation plays a key role in this solution, not only with regard to tires but also for services.

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<sup>1</sup> Study conducted by Eurostat, the EU statistics bureau, and published on July 20, 2010

<sup>2</sup> German Statistics Bureau, January 2010

<sup>3</sup> Compared with the average of its main competitors. Based on motorway tests conducted in July 2010 by TÜV SÜD Automotive with new 315/80 R 22.5 MICHELIN X® ENERGY™ SAVERGREEN XZ and XD tires and 385/65 R 22.5 MICHELIN X® ENERGY™ SAVERGREEN XT tires.

- A comprehensive solution to make **trucking safer**. The new **MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN** tires deliver enhanced grip, endurance and resistance to cuts and scrapes. This means greater safety for both people and merchandise. At Michelin, innovation is underpinned by the ability to simultaneously improve different areas of performance.
- A comprehensive solution to make **trucking more cost-effective**. Michelin is addressing this issue from all angles – fuel savings, total mileage and the “four lives” of a tire (new, regrooved, retreaded and regrooved a second time). This cost-effectiveness results from improvements in different areas of tire performance that are generally hard to reconcile, as well as from the Fleet Solutions and/or Michelin Euro Assist service programs for truckers.
- A comprehensive solution to **support sustainable development**. At Michelin, tire performance and manufacturing performance go hand in hand. Regarding tire performance, greater fuel efficiency means less CO<sub>2</sub> and fewer tire casings to cover a given distance (thanks in particular to InfiniCoil technology) As for manufacturing performance, Michelin tires are produced in ISO 14001-certified plants.

For Michelin, the challenge is to simultaneously improve performance in several areas, including grip, tread life, durability, damage resistance and fuel efficiency. Michelin's strength resides in its ability to enhance one performance feature without sacrificing another. This balanced performance is the trademark of all Michelin tires.

Achieving this performance combination requires leading-edge technology, which is backed by an annual research and development budget of nearly €500 million – an unprecedented amount in the tire industry.

It's also the result of solid commitments. Nearly 20 years ago, the Group's research and development teams began designing truck and car tires capable of reducing fuel consumption – and consequently carbon emissions – without affecting other key tire properties, such as safety and total mileage.

The comprehensive MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN line-up is a concrete example of the Michelin Group's strategic commitment to never sacrificing performance in one area for improvements in another. As a result, Michelin tires represent a reliable solution for trucking companies looking to overcome the problems currently facing the industry.

## MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN: A comprehensive solution for long-haul trucks

For the first time, Michelin is offering a single line-up of tires capable of equipping all five truck axles. Called MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN, the range provides trucking companies with safe, fuel-efficient, long-lasting tires for the front, drive and trailer axles.

### ➤ Five axles covered by a single family of tires

**For the front axle**, the designated tire is the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XZ or XF. Both integrate the ENERGY<sup>™</sup> Flex casing, an innovative tire architecture developed as part of the Michelin Durable Technologies package for truck tires. Thanks to this advanced heat-stable casing, all parts of the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN tire, including the sidewalls and the bead, help reduce fuel consumption.

While the crown accounts for 70% of the heat generated by a tire as it turns, the sidewalls and bead each account for 15% of the energy loss. Michelin teams have therefore developed new solutions to reduce energy loss, and consequently fuel consumption.

The new Energy<sup>™</sup> Flex casing incorporates three technological benefits:

- An Energy<sup>™</sup> rubber compound, even in the most sensitive parts of the tire.
- Thinner tire components.
- More torsionally flexible steel cables.

What's more, this front tire can support a weight of eight tonnes regardless of its size<sup>4</sup>. This performance in 70-series tires is due to the use of InfiniCoil technology. The impressive load-carrying capacity of the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN front tire clearly demonstrates its robustness and damage-resistance.

**For the drive axle**, the designated tire is the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XD. In addition to the ENERGY<sup>™</sup> Flex casing, the tire features double-wave sipes that increase tread life and provide superior traction. The Michelin X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XD increases drive axle traction by up to 10%<sup>5</sup> compared with its predecessor, the Michelin XDA2+ Energy.

The new tire's three-dimensional double-wave sipes make the tread block more rigid, thereby reducing both wear and rolling resistance. Because they respond horizontally and vertically, double-wave sipes offer both tighter grip and longer life than traditional tread patterns.

**For the load axle**, Michelin has introduced the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XT. Also integrating the ENERGY<sup>™</sup> Flex casing, the tire features strengthened sidewalls that are better able to withstand abrasive contact with sidewalks and traffic circles.

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<sup>4</sup> An axle's maximum load-carrying capability is determined by the truck manufacturer, in compliance with prevailing regulatory requirements. Even when the axle is fitted with tires that can carry a greater weight, the maximum load defined by the vehicle manufacturer should not be exceeded.

<sup>5</sup> In-house test conducted on March 13, 2010 of a 315/80 R 22.5 MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XD tire compared with a 315/80.22.5 XDA2+ tire.

➤ **MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN tires, key energy performance enhancers for the latest generation of vehicles**

Because truck manufacturers are constantly looking for ways to reduce operating costs, they quickly recognized the fuel efficiency, safety and total mileage benefits provided by MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN tires.

That's why the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN line-up equips trucks made by Daimler, Iveco, MAN, Scania, Renault Trucks and Volvo.

Manufacturers see Michelin's fuel-efficient tires as a way of improving their vehicles' environmental footprint while continuing to provide users with maximum safety protection.

## **MICHELIN deploys a comprehensive solution to make trucking safer**

### **➤ Meeting the expressed needs of professional truckers**

In today's highly competitive business environment, truckers' priorities (as confirmed in the above-mentioned July 2010 GMV study entitled *Truck Tire Users and the Environment*) are to satisfy the demands of their customers and deliver goods on time.

Of the 739 trucking companies in five European countries interviewed for the study, nearly half focus first and foremost on ensuring the long-term viability of their operations. And their top priorities – by far – are vehicle reliability (97%) and the safety of the goods carried (92%).

Fully aware of these expectations, Michelin has built its commitment to safe road transport on three foundations:

- High-quality products and services that are even more efficient and reliable.
- Innovations that enhance safety.
- Ground-breaking services that make tire management easier for truckers.

Regarding tires, Michelin's capacity for innovation resides in its ability to simultaneously improve performance in several areas, such as grip, braking, cornering stability, damage resistance and durability. The strength and effectiveness of Michelin tires derive from this balanced performance.

The MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN makes road safety an essential criterion. With an eight-tonne load capacity for the front tire in either size (315/70 R 22.5 or 315/80 R 22.5), both robustness and damage-resistance have been increased. The footprint of the 70-series tire has been improved using InfiniCoil technology to ensure superior road-holding ability. Thanks to double-wave sipes – part of the Michelin Durable Technologies package – the drive axle tire's grip has been increased by 10%<sup>6</sup> compared to its predecessor, the MICHELIN XDA2+ ENERGY<sup>™</sup> 315/80 R 22.5. Lastly, the strengthened sidewalls on the trailer tire provide enhanced resistance to abrasive contact with sidewalks and traffic circles.

The InfiniCoil architecture used in the design of MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN tires also helps to improve durability and increase load capacity. InfiniCoil technology consists of wrapping a giant steel cord around the crown. This Michelin-specific architecture optimizes rolling circumference rigidity. In addition, by stabilizing the crown, InfiniCoil limits structural deformation and widens the contact patch, thereby delivering more grip for safer driving.

To reduce vehicle downtime due to tire-related incidents and resulting productivity losses, the Michelin Euro Assist service was introduced around ten years ago. Backed by a highly reliable network of 3,200 selected service providers, Michelin guarantees a service call within two hours, anywhere in Europe. If that guarantee isn't met, customers are reimbursed the full cost of the service call. Membership is free and unlimited and the service is available around the clock. If the truck can be driven, the Stop & Go service directs the driver to the nearest Michelin Euro Assist specialist so that the vehicle is not taken out of service.

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<sup>6</sup> In-house test conducted on March 13, 2010 of a 315/80 R 22.5 MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XD tire compared with a 315/80.22.5 XDA2+ tire.

## **MICHELIN deploys a comprehensive solution to make trucking more cost efficient**

### **➤ Helping to reduce transport costs**

The aforementioned GMV study (*Truck Tire Users and the Environment*, July 2010) revealed that 68% of respondents support an environmental initiative that would involve reducing fuel consumption. In other words, they're in favor of protecting the planet on the condition that there is a financial benefit for them.

Michelin is addressing this issue in several ways – fuel efficiency, total mileage, the “four lives” of a tire and related services. MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN tires reduce fuel consumption by 1.7 liter per 100 km compared to the average of competing major brand tires<sup>7</sup>.

By lowering fuel consumption, the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN also reduces greenhouse gas emissions. Compared with the MICHELIN A2 ENERGY<sup>™</sup>, the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN reduces carbon emissions by around 2.5 tonnes over a tire's entire lifetime.

The MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN also saves trucking companies money because of its longevity. Thanks to its InfiniCoil architecture, patented materials and special tread with double-wave sipes, the Michelin X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN is exceptionally long lasting and wears more evenly.

The tire's longevity is also due to the fact that it can be regrooved, then retreaded and then regrooved a second time. This is what is referred to as the “4 lives” of a Michelin tire.

To benefit fully from the possibilities offered by the MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN, the tire maker – through its distribution network – is providing trucking companies with an array of useful services to ensure long-term cost-savings. In addition to regrooving and retreading, correct tire pressure and optimized axle geometry also help to make significant gains in fuel efficiency. Michelin experts can provide trucking companies with advice that really makes a difference.

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<sup>7</sup> Compared with the average of its main competitors. Based on motorway tests conducted in July 2010 by TÜV SÜD Automotive with new 315/80 R 22.5 MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XZ and XD tires and 385/65 R 22.5 MICHELIN X<sup>®</sup> ENERGY<sup>™</sup> SAVERGREEN XT tires.



## MICHELIN deploys a comprehensive solution to support sustainable development

### ➤ Innovating to reduce the environmental impact of road transport

Even if “environment for the environment’s sake” is not a priority for most road transport professionals in Europe – again according to *Truck Tire Users and the Environment*, the GMV study published in July 2010 – truckers nonetheless have a positive image of “green” initiatives. In the UK, for example, 87% of those interviewed feel that environmental concerns represent a way to develop new business and generate productivity gains.

Reconciling environmental protection and enhanced mobility is a challenge that Michelin has been pursuing for a long time. In plants, every effort is made to reduce the environmental impact of the production process, from the amount of energy consumed during manufacture and the quantity of waste generated to the quality of liquid and gaseous emissions. All MICHELIN X® ENERGY™ SAVERGREEN tires are produced in plants certified to ISO 14001 standards.

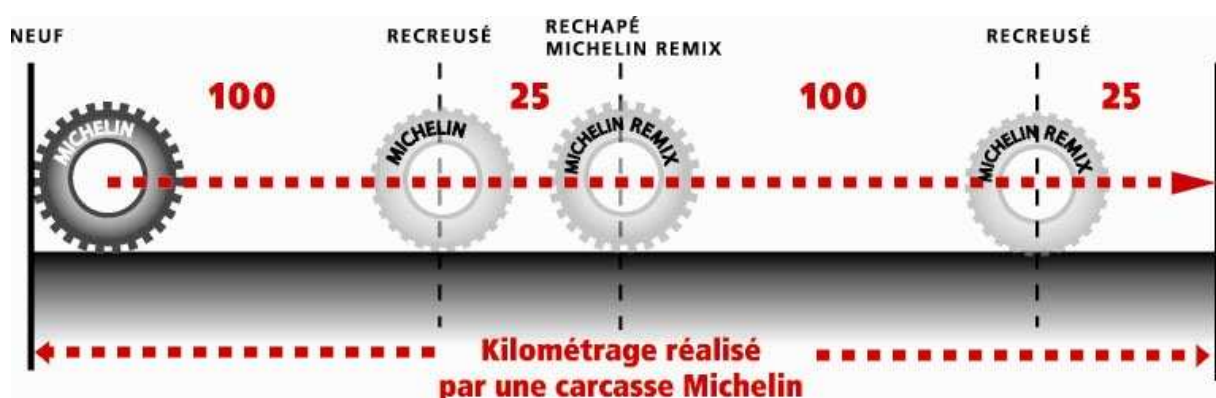
The MICHELIN X® ENERGY™ SAVERGREEN range has a direct impact on the environment as it reduces both fuel consumption and CO<sub>2</sub> emissions. The tire also has an indirect impact on the environment due to its longevity. Since a new tire is longer lasting and can also be regrooved and retreaded, fewer tires are manufactured meaning that less raw material is consumed.

### ➤ The 4 lives of a Michelin tire: reducing raw material consumption without sacrificing performance

A Michelin truck tire is designed to live four times.

Regrooving and retreading help improve tire mileage without sacrificing a tire’s safety performance. The solutions developed by Michelin increase tire life by a factor of 2.5 while reducing raw material consumption by 70% to 75%.

#### The four lives of Michelin truck tires

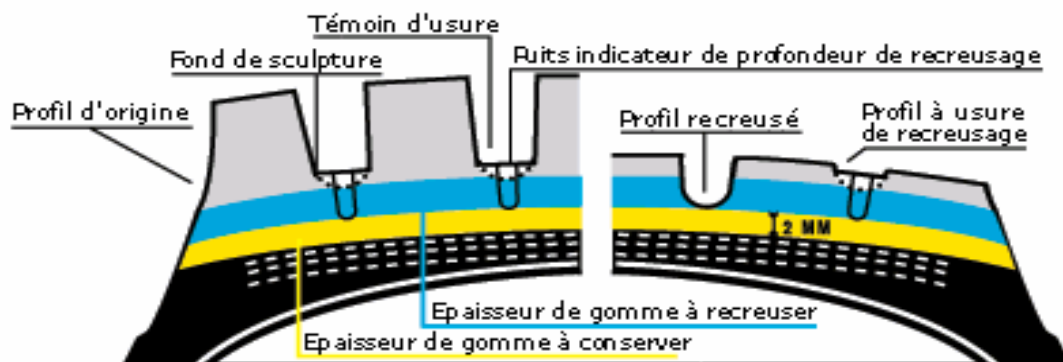


Regrooving is a key stage, which is why, beginning in the design phase, Michelin engineers specify an undertread of compound that is thick enough to allow high-quality regrooving without affecting either the strength or toughness that underpin the tire’s safety performance.

Tires are regrooved when the tread depth is 2 to 3 millimeters. The process is carried out by an expert technician who retraces the original tread with a specialized, heat-activated regrooving tool. Regrooving gives sharp new edges and a tread depth of about 5 to 7 millimeters.

A regrooved new tire that is worn can be retreaded. The tire can then be used again until just 2 to 3 millimeters of tread remain, when it is regrooved for a second time, giving it a fourth life.

All Michelin tires have a regrooving well in the tread wear indicators to allow high-quality regrooving.



**A Michelin Remix retread delivers the same performance as a new product** in terms of total mileage, grip, handling, damage resistance, rolling resistance, noise and road-holding. Thanks to retreads, resources are conserved and fewer new tires are manufactured. By recycling worn tires, Michelin is actively supporting the principles of sustainable development.

Michelin is the only manufacturer that restores worn truck tires using the same processes, treads and rubber compounds as for new tires, thanks to the “just like new” Michelin Remix technology.

## **Michelin Group: Milestones**

For more than a century, Michelin has dedicated its expertise and capacity for innovation to enhancing the mobility of people and goods around the world.

**1889:** Founding of **Michelin et Cie**.

**1891:** Michelin files its first patents for removable and repairable tires.

**1895:** Michelin introduces Éclair, the first car to be fitted with pneumatic tires.

**1898:** “Birth” of **Bibendum**, the Michelin Man.

**1900:** **First Michelin Guide** published.

**1905:** Introduction of the Michelin Sole tread with hobnails to improve tire grip and durability.

**1910:** **First 1/200,000 scale Michelin road map** published.

**1913:** Michelin invents the **removable steel wheel**.

**1923:** First **low pressure car tire** (2.5 bar).

**1926:** Michelin creates its first Green Guide for tourists.

**1930:** Michelin files a patent for the integrated tube tire.

**1938:** Michelin introduces Metalic, the first truck tire with a steel casing.

**1946:** Michelin invents **the radial tire**.

**1959:** Michelin introduces the first radial tire for earthmovers.

**1979:** The Michelin radial tire wins the Formula 1 championship.

**1981:** The MICHELIN X Air is the first radial aircraft tire.

**1989:** Michelin launches the first online travel itinerary service, on France’s Minitel teletext network

**1992:** Launch of the fuel-efficient **MICHELIN ENERGY™ tire**.

**1993:** Michelin invents the new C3M tire manufacturing process.

**1995:** The US space shuttle lands on Michelin tires.

**1996:** Michelin invents the vertically anchored PAX System tire.

**1998:** The first **Michelin Challenge Bibendum**, the world’s leading clean vehicle event

**1998:** The Michelin Man’s **100th birthday**.

**2000:** Michelin Man voted best logo of all time by an international jury.

**2001:** Michelin brings to market the world’s largest earthmover tire.

**2003:** Launch of Michelin brand automotive accessories.

**2004:** New corporate signature introduced: “**Michelin, a better way forward.**”

**2004:** Launch of the MICHELIN XeoBib, the first agricultural tire that operates at a constant low pressure.

**2005:** Michelin provides tires for the new Airbus A-380 aircraft - Launch of the MICHELIN Power Race, the first dual-compound racing tire approved for road use.

**2006:** Michelin revolutionizes truck tires with MICHELIN Durable Technologies.

**2007:** Launch of the new **MICHELIN ENERGY™ Saver** tire, which reduces fuel consumption by nearly 0.2 liters per 100 kilometers, thereby lowering carbon emissions by 4 grams per kilometer.

**2008:** Introduction of the MICHELIN X ENERGY™ SAVERGREEN truck tire.

**2009:** 100th edition of the MICHELIN guide France.

**2010:** The MICHELIN guide Germany celebrates its 100th anniversary.

MICHELIN Pilot Sport 3 and MICHELIN ALPIN A4 launched in the replacement tire market.

The 10th MICHELIN Challenge Bibendum held in Rio de Janeiro, Brazil.

## Michelin Group: Key Figures

<b>Company founded:</b>	1889
<b>Production facilities:</b>	72 plants in 19 countries
<b>Number of employees:</b>	109,000 worldwide
<b>Technology Center:</b>	More than 6,000 researchers on three continents: North America, Europe and Asia
<b>Annual R&amp;D budget:</b>	Over €500 million
<b>Annual output:</b>	Around 150 million tires produced and over 10 million maps and guides sold in more than 170 countries
<b>2009 net sales:</b>	€14.8 billion

**An extensive portfolio of brands covering all market segments:** Michelin, BFGoodrich, Kleber, Uniroyal, Riken, Taurus, Kormoran, Warrior, Pneu Laurent, Recamic, Michelin Remix, Euromaster, TCI Tire Centers and TyrePlus

Discover the history of the Michelin Group with a visit to L'Aventure Michelin.  
The latest news and useful information can be found at [www.laventuremichelin.com](http://www.laventuremichelin.com)

