



**MICHELIN**

**MICHELIN,  
ELECTROMOBILITY  
PIONEER**



***MICHELIN, PIONEERING  
INNOVATIONS TO MEET  
THE CHALLENGES  
OF SUSTAINABLE MOBILITY***

For more than 100 years, Michelin has been dedicated to developing innovative mobility solutions that surpass customer expectations, while minimizing their environmental impact.

In 1899, Michelin developed the tires for the “Jamais Contente”, the first vehicle to exceed 100 km/h which was equipped with... an electric motor.

Since then, from the first radial and green tires to the MICHELIN Energy Saver, Michelin has constantly innovated to develop tires that reduce CO<sub>2</sub> emissions, minimize the use of materials, last longer and have a smaller carbon footprint.

Today, more than ever, sustainable development is central to Michelin’s corporate mission and product and service offerings.

# THE RISE OF ELECTRIC VEHICLES IS A POWERFUL LEVER FOR DECARBONIZING CITIES



Global EV sales reached **6,75 MILLION UNITS IN 2021**, 108% more than in 2020.

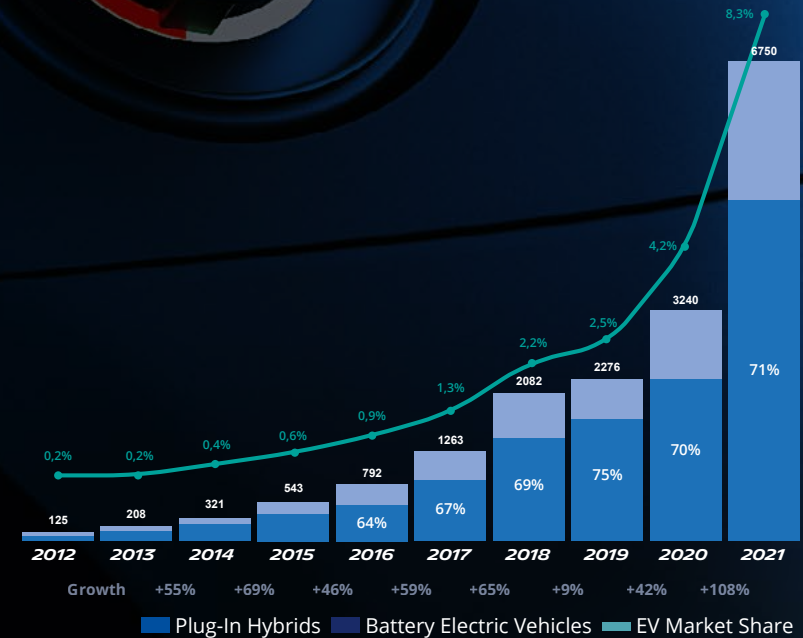
This volume includes passenger vehicles, light trucks and light commercial vehicles.

The global share of EVs (BEV & PHEV) in global light vehicle sales was **8,3% COMPARED TO 4,2% IN 2020.**



BEVs stood for **71% OF TOTAL EV SALES**, PHEVs for **29%.**

## GLOBAL BEV & PHEV SALES ('000S)



Source: EV-Volumes

# **INTRINSIC PERFORMANCES OF THE TIRE ARE PUT UNDER TOUGHER STRESS WITH ELECTRIC VEHICLES**



With **quieter vehicles**, the main source of noise comes from the tires and no longer from the engines.



With the **instantaneous torque** of electric motors and the **weight of the batteries**, the tires wear out faster. Electric vehicles will consume tires 20% faster than Internal Combustion Engine vehicles.



With a **autonomy challenge**, the rolling resistance and aerodynamics of the tires are even more decisive for **energy consumption and range**.

# MICHELIN IS THE PIONEER AND TECHNOLOGY LEADER IN TIRES FOR ELECTRIC VEHICLES

- > Performances required for electric vehicles are **Michelin's areas of legitimacy and excellence**
- > Historically, Michelin tires offer a **significant advantage in terms of longevity**, which is critical when we know electric vehicles will consume tires 20% faster than Internal Combustion Engine vehicles
- > Durability, rolling resistance, performance made to last, load capacity, low noise... **Michelin tires offer the best value** to owners of electric vehicles owners



## **ROLLING RESISTANCE**

To maximize battery life and range, electric vehicles need low rolling resistance tires, an area where Michelin is renowned as the pioneer and expert. Over the past twenty years, Michelin has **improved the energy efficiency of its tires by over 20%** for passenger cars without compromising on safety or longevity.



## **LOAD CAPACITY**

Electric vehicles are heavier because of the weight of their batteries. Michelin supplies tires with a bigger diameter, or the same dimension but with a higher load capacity. Michelin has also launched **Selfseal to self-repair punctures**, enabling manufacturers to save the weight of a spare wheel.



## **DURABILITY**

Electric vehicles have higher and more sustained torque levels than combustion-powered vehicles. These necessitate greater requirements in terms of tire lifetime and durability, another Michelin **historical leadership area**.



## **NOISE**

Michelin helps reduce the internal noise caused by the tires, a major concern for electric cars with noiseless engines. And this, thanks to MICHELIN Acoustic, a vibration-absorbent polyurethane foam ring inside the tire.

## FACTS & STATS

MICHELIN Acoustic™ Technology **REDUCES NOISE BY 20%**

Michelin just sold its **10,000,000<sup>TH</sup> TIRE WITH MICHELIN ACOUSTIC**

MICHELIN Pilot Sport EV **EXTENDS BATTERY RANGE BY 60 KM**

MICHELIN ePrimacy offers a **+7% INCREASE IN BATTERY RANGE**

**AROUND 50%** of all MICHELIN bicycle tires are **"E-BIKE READY"**

Michelin also introduced an eBus tire: MICHELIN X® INCITY™ EV Z which improves in rolling resistance **BY 13% AND LONGEVITY BY 10%**

## SPECIAL EV TIRE LINES



### MICHELIN PILOT SPORT EV

high performance summer road tire for electric vehicles



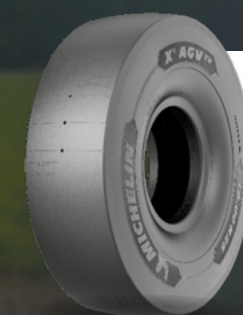
### MICHELIN E-PRIMACY

eco-designed summer tire for fuel, hybrid and electric vehicles



### MICHELIN X® INCITY™ EV

for electric buses



### MICHELIN X AGV EV

for automatic guided vehicles operating in ports

Even if not specially developed for electric vehicles, many other Michelin tire lines are "EV ready" as they already optimize energy efficiency, durability, high load capacity and little noise – as the **MICHELIN X® MULTI™ ENERGY™** range which brings together the best performances to support the development of electric motorized heavy goods vehicles.





## ***MICHELIN'S COMMITMENT TO ELECTROMOBILITY GOES EVEN BEYOND***

- > By investing in hydrogen for the past 20 years**, a key technology for the massive development of electric vehicles and achieving zero-emission mobility.
- > By positioning itself alongside its fleet customers** as an aggregator of services and solutions to support their energy transition.

