Michelin Call Option on Tire Emission

Michelin Analysis System for Light Particles Emitted

- The invention is critical for devising innovative solutions, such as…”environmentally-friendly tires,” to help address the environmental problems associated with…
- Under their new GHG standards, equipped with a mobile carbon capture (i.e., Aramco mobile carbon capture) to curb engine emissions
- How does Formula 1 intend to make its circuit race sustainable by 2025 without Michelin, considering

> Pirelli’s contract has been extended until 2027?

Michelin ended 2023 with a price-to-sales ratio of 0.82, compared to the 2022 ratio of 0.65. Although sales slightly declined in 2023 versus 2022 to 0.86%, this is noteworthy for Michelin given trade disruptions and global tightening. Among its peers, Sustainalytics ranks Michelin’s ESG risk rating as the second lowest, just above its Italian counterpart Pirelli, at 11.5 as of October 5, 2023. But wait! Is Michelin subtly competing with Pirelli through its new development in reducing tire abrasion and wear particles, or is it all fair game?

Just between the European Union adoption of Euro7 Standards and the United States EPA passing Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles, and Australia’s new vehicle efficiency

standard, a new step has been taken towards curbing small particle emissions from automotive tires and brakes.

Michelin announced in a press release that its team of experts had developed a system critical for analyzing small particles in the surrounding air. The first research results had already been presented to the scientific community and the auto industry.

The system, unveiled in March at Tire Technology Expo 2024, can capture, sort, count, and characterize particles near tires with unparalleled precision and reproducibility.

By measuring and quantifying rubber particles in the surrounding environment using reliable and standardized measurements, the technology will help address the concerns of…"air pollution caused by tires" and other "road wear particles," which have been blamed for

various respiratory illnesses in urban populations.

Additionally, the invention is critical for devising innovative solutions, such as…"environmentally-friendly tires," to help address the environmental problems associated with "tire and brake wear particles."

While reading Frédéric Biesse's research, I contemplated the following:

- The United States EPA projects new vehicle technology penetration for final light-duty vehicles of internal combustion engines to vary around 29% using Pathway-A, 21% using Pathway-B, and 17% using Pathway-C.

- These new vehicles, under their new GHG standards, equipped with a mobile carbon capture (i.e., Aramco mobile carbon capture) to curb engine emissions.

- Additionally, Michelin's environmentally-friendly tires (when finally in the market) could truly solve for a lower emission light-duty vehicle.

But! How Severe is the Impact of Tire Rubber Emissions?

According to a report published in September 2021 by the UN Environment Program (UNEP) and updated in September 2023, air pollution is the single biggest threat to public health globally, leading to an estimated 7 million premature deaths yearly.

In 2019 alone, an estimated four million people died globally from exposure to outdoor air polluted with fine particulates, with the highest number of deaths occurring in Central Europe and East Asia.

Although often overlooked, vehicle tires

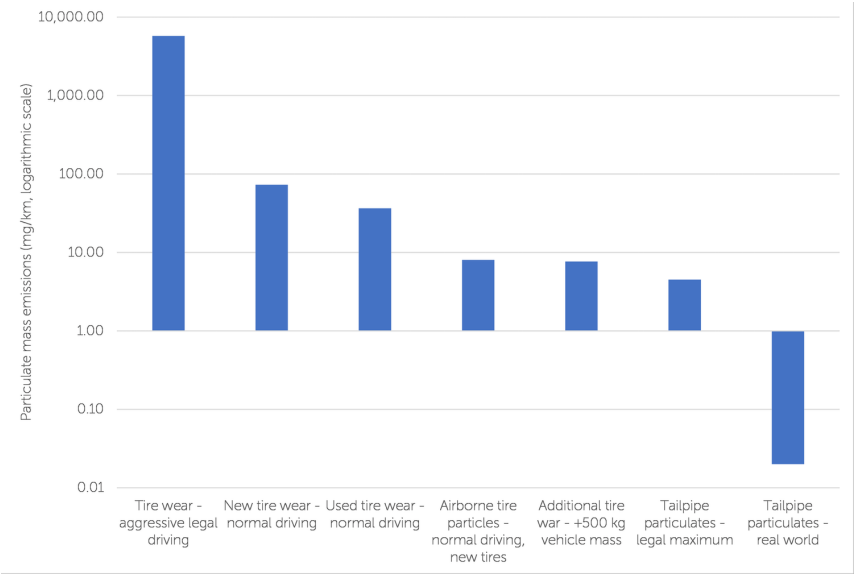
contribute a significantly high proportion of the fine particulates floating in the air we breathe outdoors.

To put it into perspective, approximately 6.1 million metric tons of tire wear dust end up in the atmosphere and waterways yearly. This makes tire wear particles one of the most common microplastic pollutants in the oceans.

As the number of vehicles hitting the road every year rises steadily and vehicle tailpipe emissions get cleaner due to many years of innovation in the auto industry, emission experts warn that brake and tire wear particles have surpassed tailpipe emissions multiple times. The problem could only exacerbate if not mitigated.

A report published by the Guardian last year also revealed that particles released from tires exceed those emitted through tailpipes by 1,850 times. About

300,000 tons of tire rubber are released into the environment annually in the US and UK alone, as per tests conducted by a leading independent emission testing company, [Emission Analytics](#).



Comparison of Tailpipe and Tire Wear Emissions

Furthermore, the enormous amount of tire particles contains a significant proportion of harmful fine particles classified as PM2.5. These carcinogenic microplastics float in the air and can

cause severe respiratory, circulatory, and mental illnesses when inhaled, some of which may be fatal.

Curbing Non-exhaust Emissions

As the world works to achieve ambitious emission reduction goals, the latest regulations in the US, Europe, and Australia are now incorporating non-exhaust emissions into vehicle emission guidelines.

For instance, the European Union has introduced brake and tire wear particle emissions limits for the first time in its new regulation (Euro7 Standards) as part of the vehicles' overall emission profile. In the US, the EPA proposed stricter rules for tire particle emissions, including seeking alternatives to 6PPD chemicals used to make tires in California.

With non-exhaust emissions, mainly from tire, brake, and road surface wear making

up 90% of vehicle emissions, Michelin's analysis system is a step in the right direction, allowing for accurate measurement of vehicles' emissions.

On a side note, how does Formula 1 intend to make its circuit race sustainable by 2025 without Michelin, considering Pirelli's contract has been extended until 2027? A Formula 1 fan is asking for the sustainability community. Did someone say, Carbon Offsets? What a show!