

**2019/2020 ABB FIA Formula E Championship
Round 1: Diriyah E-Prix**

Michelin in the ABB FIA Formula E Championship's "Season 6"

Michelin is introducing motor racing's first connected tyre incorporating an embedded sensor for the 2019/2020 FIA Formula E Championship

- Group Michelin uses Formula E as a laboratory to foster innovation that will help it to achieve its sustainable mobility-related objectives in the interests of all, namely enhanced safety, increasingly sustainable materials, the expansion of electric mobility and accelerated connected mobility.
- Michelin Track Connect: a connected solution that fits perfectly with Formula E's avant-garde positioning.
- The MICHELIN Pilot Sport is the third-generation of the Michelin tyre developed especially for Formula E.
- For the first time, Formula E grids will comprise 12 teams and 24 drivers.
- The calendar of Formula E's Season 6 will run from November 2019 to July 2020, with a schedule of 14 races at 12 different venues.
- Michelin is also a partner of the Jaguar I-Pace eTrophy for the second season running.

Sustainable mobility is in the Group's DNA and the underpinning reason for its involvement in Formula E

In the world of motorsport, as in everything the brand undertakes, Michelin is committed to a long-term sustainable performance strategy that applies to all the products, services and solutions it markets, whether for motorsport purposes or everyday use.

Michelin's VISION plan has set the entire Group a stimulating challenge as it works on reducing its environmental footprint. By 2050, eighty percent of the raw materials used to manufacture Michelin tyres will be sustainable, i.e. recycled or bio-sourced, with the latter accounting for half of this target. To achieve this goal, Michelin can count on both its unique expertise in the field of raw materials and its culture for innovation which covers many areas, not only tyres.

Formula E allows Michelin to put promising new materials through their paces in extreme conditions in order to ratify design choices that make more efficient use of materials and resources, while at the same time delivering high performance and energy efficiency throughout its tyres' working life, the aim being to lessen their environmental impact, extend their useful life and reduce energy consumption.



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Michelin's research work also seeks to use fewer raw materials, not only to protect natural resources but also to minimise the amount of waste that needs to be recycled. This circular approach applies equally to its involvement in Formula E, which fosters potential for innovation in the realm of road tyres thanks to data collected during races.

A concrete example is the current MICHELIN Pilot Sport, which is the fruit of more than five years of painstaking research. Not only is it lighter and more efficient than its predecessors, but it also has many features in common with road tyres, in addition to being connected.

The MICHELIN Pilot Sport EV and its successor the MICHELIN Pilot Sport EV2 made significant progress in terms of their energy efficiency and design during the course of the championship's first four seasons.

That experience was used to develop the MICHELIN Pilot Sport, which was launched at the start of Season 5 and which will continue to be the championship's official tyre in 2019/2020.

The MICHELIN Pilot Sport stands out as the most accomplished Formula E tyre yet. Compared with Season 1's tyre, and in spite of its superior performance, it tips the scales at 25 percent less. But although six 'Season 6' tyres weigh the same as three from Season 1, lap time savings have amounted to as much as several seconds at some circuits.

Michelin's experience of low rolling resistance, or 'green' tyres dates back to 1992 and the introduction of the MICHELIN MXN, the compound of which – for the first time – incorporated silica which led to less energy being required to move the vehicle. Since then, Michelin has continued to innovate in favour of cleaner mobility. More than ever, in light of the environmental issues at stake, the automobile industry needs to save millions of litres of fuel and curb harmful emissions, while at the same time minimising the amount of energy that is consumed by electric cars, which are an increasingly common sight on the road. If only for this reason, the tyres used in Formula E have a key role to play in the development of sustainable mobility in the future.

- Lighter: In motorsport, excess weight is costly, not only with regard to performance but also in environmental terms. Reducing the amount of raw materials that need to be processed, transported and recycled means more efficient mobility. Compared with the original Formula E tyre, the new MICHELIN Pilot Sport tips the scales at almost 2kg less at the front and nearly 2.5kg less at the rear, which equates to an overall saving of around 9kg per car.

- More efficient: Tyres account for between 20 and 25 percent of the energy consumed by road vehicles. They consequently have a direct impact on the distance electric cars can travel. The second-generation MICHELIN Pilot Sport EV2 Formula E tyre marked a rolling resistance improvement of 16 percent and enabled the championship's all-electric single-seaters to extend their range by around two kilometres. The current-generation MICHELIN Pilot Sport continues to drive progress in this key area by boosting energy efficiency with no detriment to either performance or driver safety.



- More in common with road tyres: Disregarding its exclusive coloured sidewalls, the MICHELIN Pilot Sport could almost be mistaken for a mass-production tyre. With its 18-inch interior diameter – a first in the world of single-seater racing – and patterned tread, it wouldn't look remotely out of place on a standard road car. Yet the construction- and tread-related technologies it packs are strictly confidential and protected by trade secrets. The data Michelin collects during Formula E races is fed into the development of the brand's future road tyres.

- Connected: Michelin Track Connect for Formula E, the connected solution which is being used for the first time in an FIA-sanctioned race series, is a prime example of how Michelin is investing in cutting-edge technology.

The new MICHELIN Pilot Sport is a technologically-advanced tyre capable of covering complete race distances and continues to progress by taking new challenges in its stride.

The MICHELIN Pilot Sport – Technical Data

SIZE: front 24/64-18 / rear 27/68-18 (equivalent to 235/40R18 and 305/40R18)

INTERIOR DIAMETER: 18 inches

ASPECT RATIO: 40

SIDEWALL HEIGHT: front 98mm / rear 122mm

TREAD PATTERN: asymmetric, non-directional

CONDITIONS: dry or wet track surfaces

The FIA to benefit from Michelin's digital expertise

Michelin Track Connect for Formula E allows tyre pressures to be monitored automatically and reliably – whether hot or cold. This new solution addresses a demand expressed by motorsport's governing body, the FIA (Fédération Internationale de l'Automobile), which has incorporated its use into Formula E's regulations. It also meets a requirement of the teams and the championship's promoter. Michelin Track Connect for Formula E uses a Michelin-designed and developed sensor embedded in a specific casing inside the MICHELIN Pilot Sport tyres which feature in the series. The data it collects is transmitted in encrypted form to the FIA and Michelin, who are the only recipients. Not only does this make sure that the information remains confidential, but it also allows the FIA to check minimum tyre pressures are adhered to. In addition to saving time, it is additional reassurance for the teams and helps to streamline the running of race days.



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The FIA Formula E Championship fosters innovation in the field of connected solutions, allowing them to be carried over rapidly to the broadest audience possible.

Michelin's approach to connected solutions has a part to play in sustainable mobility, in the sense of mobility that is safer, more efficient, more respectful of the environment and more accessible. Michelin, which uses motorsport as a life-size laboratory, has taken advantage of the regulations that govern Formula E to incubate the development of connected solutions in extreme conditions for the greater benefit of its current and future customers.

The development work accomplished by engineers from Michelin's engineers and those of its partner Rtone, along with the experience and data they acquire in Formula E will allow Michelin's connected solutions to evolve.

Moreover, a system of this type has been available for track day enthusiasts in Europe, North America and China for several months.

Michelin Track Connect is available with ultra-high-performance MICHELIN Pilot Sport Cup 2 Connect production tyres and is employed in conjunction with a sophisticated but easy-to-use smartphone application. The system comprises four sensors (one per tyre) and a receiver. The app analyses the data it receives to make tyre pressure recommendations depending on the type of vehicle, type of use (road or track) and ground/weather conditions. It also displays accurate tyre pressure information, while a colour-coded graphic provides a real-time indication of whether the tyres are operating within their ideal window when lapping on race tracks. The data recorded by the smartphone application can be viewed, compared and shared at any time.

Michelin, an active player in the quest for cleaner mobility through fuel-cell technology

At the beginning of 2019, Michelin's subsidiary Symbio and Faurecia joined forces to create a joint venture founded on their respective fuel-cell-related activities, with a view to proposing a comprehensive offering for fuel cell-powered vehicles. The complementarity of the fuel cell-related expertise of Symbio and Faurecia must allow it to be applied to all types of mobility. As the only zero-emissions alternative to battery-powered electric vehicles, fuel cells are essential to achieving sustainable mobility since they target three key challenges: improving air quality, curbing CO₂ emissions and addressing the energy transition.

The 2019/2020 FIA Formula E Championship's teams and drivers

The entry list for the 2019/2020 FIA Formula E Championship features a 12th team (Tag Heuer Porsche) which means there will be 24 cars (two per team) on the grid:

Audi Sport Abt Schaeffler: Lucas Di Grassi and Daniel Abt

BMW i Andretti: Maximilian Günther and Alexander Sims



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DS Techeetah: Jean-Eric Vergne and Antonio Felix Da Costa

Envision Virgin Racing: Sam Bird and Robin Frijns

Geox Dragon: Brendon Hartley and Nico Müller

Mahindra Racing: Jérôme d'Ambrosio and Pascal Wehrlein

Mercedes-Benz EQ: Stoffel Vandoorne and Nyck de Vries

NIO 333: Oliver Turvey and Ma Qing Hua

Nissan e.dams: Sébastien Buemi and Oliver Rowland

Panasonic Jaguar Racing: Mitch Evans and James Calado

Tag Heuer Porsche: André Lotterer and Neel Jani

Venturi Racing: Edoardo Mortara and Felipe Massa

The 2019/2020 FIA Formula E Championship calendar

Formula E's 'Season 6' sees a number of changes introduced to the calendar, with races for the first time in Seoul and Jakarta, along with a return to London after a four-year absence. There are two e-prix in Diriyah this time around, but only one in New York.

- **Diriyah (Saudi Arabia):** November 22/23, 2019
- **Santiago (Chile):** January 18, 2020
- **Mexico City (Mexico):** February 15, 2020
- **Marrakech (Morocco):** February 29, 2020
- **Sanya (China):** March 21, 2020
- **Rome (Italy):** April 4, 2020
- **Paris (France):** April 18, 2020
- **Seoul (South Korea):** May 3, 2020
- **Jakarta (Indonesia):** June 6, 2020
- **Berlin (Germany):** June 21, 2020
- **New York (USA):** July 11, 2020
- **London (Great Britain):** July 25/26, 2020



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Partner of the Jaguar I-Pace eTrophy for the second consecutive season

Last season, in addition to its involvement in Formula E with Panasonic Jaguar Racing, Jaguar launched an all-new single-make championship: the Jaguar I-Pace eTrophy. This curtain-raiser series features electric racing cars based on the brand's road-going I-Pace model and takes the form of 25-minute races organised ahead of FIA Formula E Championship rounds. The cars are equipped with Michelin tyres derived directly from a 22-inch diameter road tyre. This tyre fully embraces the Formula E ethos, as it is designed to function in all weathers. Michelin and Jaguar are original equipment partners for a number of models and this series reinforces the relationship between the two firms.

The Jaguar I-Pace eTrophy calendar is slightly shorter than that of the FIA Formula E Championship, with only 10 races at eight venues. It does not visit Santiago, Marrakech, Seoul or Jakarta.



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