

Revolution in testing as new Porsche Formula E car pushes boundaries

05/02/2026 The development of Porsche's future Formula E race car is in full swing as the new all-electric single-seater, which has been built to the ABB FIA Formula E World Championship's fourth vehicle regulations, has been testing since November.

With 600 kW (816 PS) of power, permanent all-wheel drive, new tyres and significantly increased downforce, the so-called GEN4 delivers the biggest performance leap seen in the championship to date. The real boundaries, however, are being pushed by vehicle components developed in-house by Porsche. Despite an extended service life, they are designed to be lighter, deliver higher performance and reduce costs at the same time. Until October, Porsche Motorsport will continue to develop what is its most extensive hardware package for Formula E to date. Thereafter, the focus will shift to the continuous optimisation of the software. In many respects, the development cycles in the race series mirror those for Porsche sports cars – albeit under extreme conditions.

"In Formula E, we primarily develop the technical components that are relevant for our production sports cars," says Thomas Laudenbach, Vice President Porsche Motorsport. "That is one of the reasons why we compete in Formula E." With the introduction of GEN4, these in-house developments have essentially expanded to include two additional components: the DC/DC converter and the brake-by-wire system.

Porsche's in-house developments to date already include the operating software, pulse inverter, electric motor, gearbox, differential, drive shafts and other drivetrain components on the rear axle, as well as cooling, carrier and suspension components at the rear.

Florian Modlinger, Director Factory Motorsport Formula E: "With the current car, the efficiency of our drivetrain is over 97 %. From the battery to the wheel, less than 3 % of the energy used is lost – close to perfection and a key advantage of electric drive. In our development brief for GEN4, alongside further efficiency gains in the drivetrain components, we focused on potential in terms of weight, durability and costs – similar to EVs for the road. At the same time, 600 kW represents a 71 % increase in power in Attack Mode. Overall, I believe it is fair to speak of a revolution. Seeing the car on track for the first time with its acceleration was a real pleasure. My thanks go to the development team in Flacht for this milestone in the project."

Triple pressure: GEN3, GEN3 Evo and GEN4

By mid-January, the GEN4 Porsche had completed 1,472 test kilometres on the circuits of Monteblanco and Almería in Spain. A large proportion of the development and testing work, however, has taken place – and continues to take place – in the simulator, saving resources and costs. Modlinger: "The concept phase began in 2024. In the same year, we moved into simulator work. The project therefore started during Season 10, when we were still racing the predecessor of the current GEN3 Evo, the GEN3. At the time, we fought for all three titles right to the end, secured the Drivers' World Championship with Pascal – and at the same time developed the GEN3 Evo. We work in an agile way, similar to series-production projects: you run the existing vehicle, bring the facelift to market and already design the next generation. The difference is that our cycles are shorter and our budgets smaller – with maximum pressure to succeed. After all, we are contesting an FIA World Championship for Porsche."

In the early test phase, work on the development car focuses on reliable operation and the interaction of all components, but gradually, the emphasis shifts towards performance. Due to the strictly limited number of test days in Formula E, some findings are validated in the simulator. The Porsche customer team is also testing the new car before the FIA homologates the specification in the autumn.

Further comments on Porsche's GEN4 development car

Pascal Wehrlein, Porsche factory driver (#94): "I was able to drive the new car for the first time in

Almería. It is really fast and great fun to drive. Thanks to the new aerodynamics, we are significantly quicker, especially through the faster corners. They generate noticeable downforce. Because we have become so efficient over the years, we can finally afford the additional drag. I think GEN4 will be a real eye-opener for many people out there. Now it's about fine-tuning our package as much as possible. I'm glad that Nico and I can carry out the test work. That allows us to tailor the GEN4 very well to us as regular drivers."

Nico Müller, Porsche factory driver (#51): "The GEN4 is a real beast – with huge power and traction thanks to the permanent all-wheel drive. You could almost say it feels like a different sport. How the car accelerates, how it brakes, how aggressively you can drive when trying to extract a bit more lap time: taken together, it reminds me of the supercars in rallycross. The sporting regulations for the new era have not yet been defined, but purely from a technical perspective, the racing is set to change significantly. I'm curious and very much looking forward to the next phase of testing."

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