



ABOVE The car features a prominent front splitter and a number of new cooling vents around the wheel arches

Tesla's latest model, the P100DL, comes with a 100 kWh battery, which would offer a useful increase in performance and range. Converting this to two-wheel drive goes somewhat against the series' ethos of using standard powertrain equipment, however. There are also practical challenges to consider, like how to send the increased power to a single rear motor without frying it.

"Suspension tuning and weight reduction is relatively easy, but making any changes to the powertrain opens up a big can of worms on any electric car," he says. "We're keen to stick with a production powertrain as much as possible. We certainly wouldn't rule out four-wheel drive – perhaps with more of a rearward bias – if that looked like the way to go."

The fact that such fundamental decisions are still open to debate may ring alarm bells. In practice, though, it doesn't come across as arrogance or naivety, but simply the relaxed confidence that comes from working within the ever-shifting boundaries of the digital world. It's faintly reminiscent of Tesla founder Elon Musk, who has an impressive (if somewhat hit and miss) history of turning sci-fi schemes into reality.

BEHIND THE SCENES

Behind the vision, there is also reassuring substance to the Electric GT championship. The development work has been carried out by the series' technical partner Campos Racing. Based in Montmeló, just down the road from the Barcelona-Catalunya grand prix circuit, the company brings a wealth of experience to the project from time spent in Formula 1, the World Touring Car Championship and Formula E.

So far, work has largely focused on safety and weight reduction. The Model S's immensely strong 'skateboard' chassis remains the backbone of the car. It's a combination of aluminium stampings, castings and extrusions, which is almost completely flat between the axles (hence the nickname).

An FIA-approved roll cage provides additional stiffness and protection, while the rest of the safety gear, including a plumbed-in fire extinguisher, race seats and safety harness come from OMP. There's also an FIA-approved battery isolator, with a warning light system which signals if the car is safe for the driver or marshals to handle in the

event of an accident.

Aside from simply stripping the road car of all unnecessary equipment, the aluminium body panels have been replaced with carbon fibre. They've also been sculpted to fit over the new, wider wheels – 18-inch OZ Racing aluminium items shod with 265 mm tyres on the front and 305 mm on the back. In total, nearly half a tonne has been shed from the 2,087 kg kerb weight of the road-going P85+, taking it down to 1,627 kg. It's worth bearing in mind that some 534 kg of the remaining mass comes from the batteries alone.

"We were pleasantly surprised how much weight we could remove without changing any of the fundamentals," says Gemmell. "We could probably go further, but we want to remain faithful to the production car as much as possible."

The development car began life with Tesla's optional air suspension system, but this has been replaced by a pushrod-operated spring and damper arrangement developed in-house by Campos. It now uses fabricated steel wishbones, providing adjustment for ride height, camber and toe.

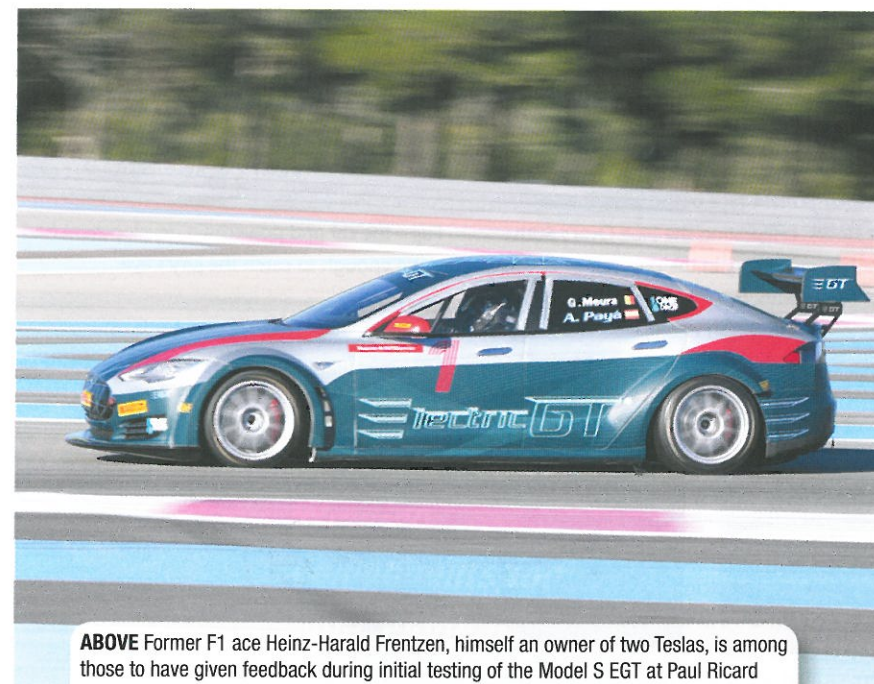
The job of developing tyres for this rather

“A platform for anyone who thinks they've produced a Tesla-killer to come and demonstrate their mettle”

unusual machine falls to Pirelli, which was announced as an official partner to the series earlier this year. It's believed to be the first time that racing tyres have been developed specifically for an electric GT car. They're said to take inspiration from the tyres used in the GT3 series, although even the Bentleys and V12 Astons are some way short of the Tesla's mass. That's also going to provide a challenge for the braking system too, which uses a dual circuit hydraulic setup from Brembo, alongside the Tesla's energy recovery system.

stood us in good stead with the cooling," says Gemmell. "One of the benefits of removing a lot of the inner fittings is that you can re-route the air and you've got plenty of freedom to change the design of the system.

"We can improve it further if needed, but I don't think it's an issue if the car requires a degree of thermal management. That's going to be part of the skill – a bit like the pioneering days of motor racing in the '20s and '30s when the cars did sometimes



ABOVE Former F1 ace Heinz-Harald Frentzen, himself an owner of two Teslas, is among those to have given feedback during initial testing of the Model S EGT at Paul Ricard

The Model S certainly now looks the part. Campos has gone to work on the aerodynamics, creating a prominent front splitter and an adjustable rear wing. It's also sprouted a number of new cooling vents around the front end and the wheel arches.

With so much electrical power, it's particularly important to keep the batteries and electronics cool. Several independent attempts to set a lap time at the Nürburgring Nordschleife using privately-owned production-spec Teslas have resulted in the cars de-rating due to temperature issues. (Even so, one apparently set a Bridge to Gantry time of 8:50 with an amateur driver on an open track.)

"Agustin's experience in the Dakar Rally, where temperatures hit over 50 deg C, has

require a bit of nurturing."

Although the series is not officially factory-backed, it has had input from Tesla's engineering team in the US, including advice on pumps, radiator sizes and cooling fluids. Electric GT is also understood to be working on electronics and software with engineers from the company's European assembly at Tilburg in the Netherlands.

TESTING TIMES

Testing is already well underway. An early evolution of the Electric GT-spec Tesla reportedly set times of 1:53:15 at Jarama and 1:55:87 at Barcelona. For comparison, the Spanish version of *Car and Driver* set an almost identical lap time with an E46 BMW

M3 road car when it visited Jarama in 2002. While that may be somewhat behind what you'd expect of a conventional slick-shod touring car, it should prove fast enough to generate excitement with a field of identical machines all jostling for position.

"I think the cars will surprise people," says Gemmell. "Pirelli is supplying acres of rubber and the Model S has an extremely low centre of gravity, with virtually perfect weight distribution, so the cornering is impressive. Where they struggle a little bit at the moment is top speed, but we're planning to use the twistier variants of the circuits we visit and the lap times should be very competitive."

Electric vehicle technology is evolving at a phenomenal rate, he points out: "We're going to see energy density going up, weight going down and power electronics that can deliver multiple megawatts (1,300+ hp). Before long we expect the lap times to beat that of comparable combustion engined cars – perhaps as early as the second season."

And that, perhaps, is where the plans for the Electric GT series get really interesting. As soon as it's practical to do so, Gemmell and his colleagues say they plan to open the championship up to other electric vehicles.

"The limiting factor at the moment is simply that the Tesla is the only high-performance electric car sold in any numbers, but I think that will change soon," he says. "Any new additions would have to be production vehicles, though, as that's an important aspect of this championship. It'll be a platform for anyone who thinks they've produced a Tesla-killer to come and demonstrate their mettle."

Quite how any performance balancing system would work remains to be seen. Gemmell admits this would be a challenge, but says they'd plan to go with a simple system based on factors like power to weight ratio and tyre dimensions.

In the meantime, the team is about to embark on an intensive series of tests at Paul Ricard, focusing on tyre development and durability. It's one of the more down to earth aspects of a project that currently poses almost as many questions as it answers. But there again, that's what electric racing is all about at the moment. Nobody really knew if Formula E would work until Alejandro Agag and his colleagues decided to stick their neck out. With a bit of luck, Electric GT could be about to follow. **ET**