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Mercedes-Benz SLS E-Cell

Greased lightning

First impression | A quote from an earlier test of the Mercedes-Benz SLS AMG: "When the engine is started, a mighty roar sounds so intense that seismologists across a wide area can register it on the Richter scale". However, there is a version of the SLS for which this doesn't apply. Yet, this model is even more eye-catching, even faster, even more exclusive and ... completely silent. What makes the "Mercedes-Benz SLS AMG E-Cell" so special?

It is a gloomy afternoon in an otherwise sunny Valencia (Spain). The sky has an ominous grey tone and it rains cats and dogs. The only thing missing is a lightning storm. That can be found in the middle of the city. There, on what was once a renowned racetrack, lightningly fast sports car storms the asphalt.

From the mist a fluorescent yellow "SLS AMG E-Cell" appears. There's only one example of this experimental sports car in the world and just a few lucky journalists have had the privilege of driving it.

E-Cell

As if a standard "SLS AMG" isn't special enough, the "E-Cell" has been fitted with experimental technology that makes it a truly unique car. "E-Cell" is Mercedes' label for an electrically powered vehicle.

Of course, there are plenty of electric cars. However, as a general rule they are meant to improve the world. They have zero emissions and can be charged by means of solar power, wind energy or other noble sources. Still, an electric motor does have another

advantage: it releases its power much faster. All power is available from one revolution per minute, while a petrol engine develops more power as the engine speed increases.

To make things even more interesting, Mercedes-Benz didn't fit the SLS with just one but with four electric motors! Inside every wheel a 98 kW (133 PS) strong electric motor is installed. This also explains the odd, black, closed wheel covers. Underneath that long, sleek bonnet only some electronics and high voltage cables can be found. The latter are so huge that they could also be used as a mains lead for a nuclear power plant!

The problem with mounting an engine inside a wheel is that the so-called "unsprung weight" increases significantly. The "unsprung mass" is the weight of the parts that aren't controlled by shock absorbers or springs. They move with every bump in the road, making the car harder to control. This is why sports cars have light alloy wheels and other weight-saving parts around the suspension.

To compensate, the SLS has been fitted with ceramic brake discs, which are 40% lighter than traditional ones.

Driving

So far for the theory. Now wet and cold to the bone, yours truly has the honour of taking the wheel of the "SLS E-Cell". The cabin of this experimental vehicle has been decorated with white and black leather. A tailor-made display shows how much power is fed to each wheel.

Despite the rain, the pedal goes to the metal from the start. This results in an explosion of power no internal combustion engine can match. With the subtlety of a thunderclap, the full torque of 880 Nm is sent to the wheels in a fraction of a second.

All four wheels desperately try to find a grip on the wet tarmac, after which the car sets off with sensational brutality. It doesn't matter how fast the SLS is going, the electric motors always have more power available than the senses can take.

Handling

In the first corner, it all seems to go horribly wrong. The electric SLS reacts very differently on the steering-wheel than the recently tested "V8 6.3 litre" petrol powered version. The wheels don't just steer, the power sent to each wheel is varied to make the steering more precise. This feels unnatural. It seems like the car wants to skid over all four wheels, while in fact the balance is optimised for each corner to improve grip. The high weight of the batteries (48 kWh, liquid cooled) causes the SLS to react a bit slower than usual, which also takes some getting used to.

Just like a car with four-wheel steering, the "SLS E-Cell" seems to bend itself in the corner. When finally accustomed to the unusual behaviour, the pace is increased once more. Now the mere smirk on the driver's face gives way to pure laughter.

In hindsight, the roar of an engine isn't missing at all. Only those who buy a sports car to impress others, may find a sound track is lacking. When it comes down to sheer driving pleasure, the electrical SLS is just as much of a thrill as a conventional sports car; the "SLS E-Cell" goes like greased lightning.

Conclusion

Mercedes-Benz built the "SLS AMG E-Cell" as an experiment on wheels. The car maker wanted to try

out new technology and find out if a super sports car like the SLS keeps its appeal as an emission-free vehicle.

Despite nagging repeatedly, the technicians hardly give away any details about the "SLS E-Cell". This isn't just because the competition is on the outlook. It is also because the car is being improved constantly. For now, the only conclusion about the unusual technology is that electric motors inside the wheels radically change the feeling in the steering. However, with proper balancing and fine-tuned electronics a high "unsprung weight" doesn't have to be a deal-breaker.

When asked if the "SLS E-Cell" will ever go on sale, the Mercedes representative answers with just a mysterious grin. Mercedes-Benz is trying to find out if the market is ready for an electric sports car. A car like the SLS is primarily bought to draw attention to the owner. But for those who want to be even more exclusive, they will feel attracted to a car that isn't just looking more special but also uses ground-breaking technology. ■

Specifications

Mercedes-Benz SLS E-Cell AMG E-Cell

Size and weight

Length x width x height	464 x 194 x 126 cm
Wheelbase	268 cm
Kerb weight	unknown
Trailer	unknown
Trailer - braked	unknown
Fuel capacity	unknown
Luggage space	176 l
Tyre size	265/35R19

Engine and performance

Capacity	unknown
Cylinders / valves	unknown
Max power	533 PS @ 1 rpm
Max torque	880 Nm @ 1 rpm
Drive	four wheel drive
Acceleration 0 - 62 mph	4 secs
Top speed	unknown
Average mileage	INF l / 100 km
Mileage urban	INF l / 100 km
Mileage extra urban	INF l / 100 km
CO2 emissions	unknown

Price

Price	Â£ 0
Price base model	Â£ 157,500