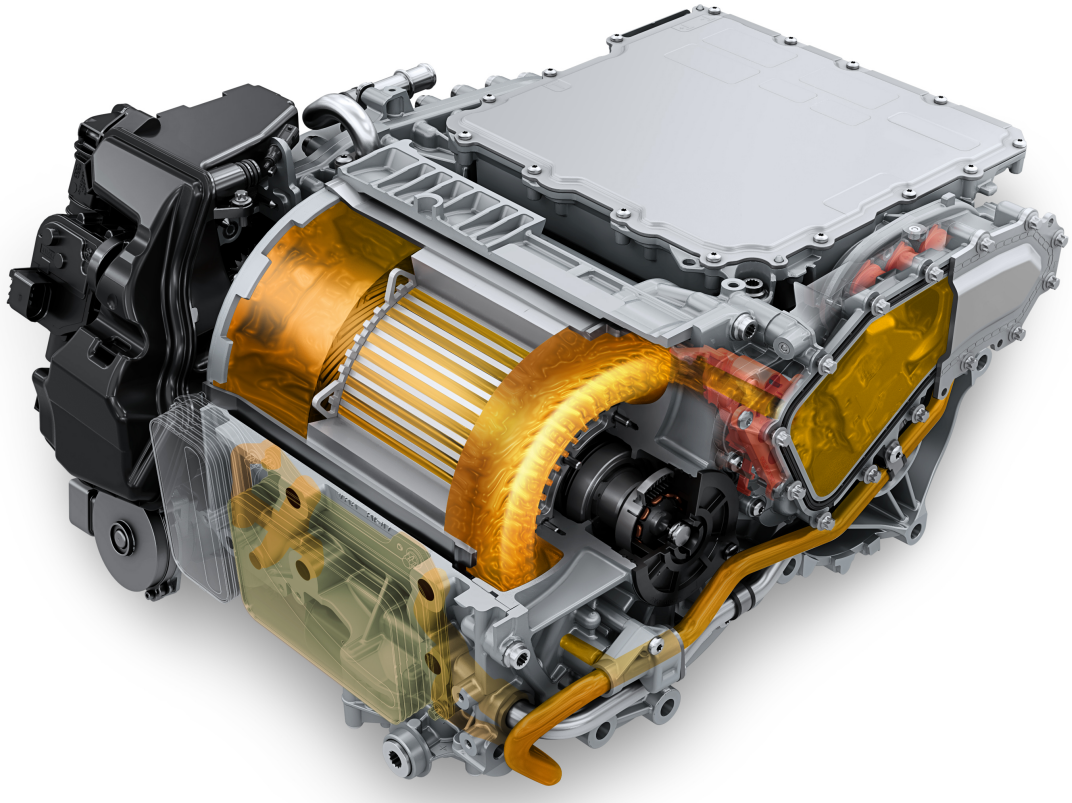

Cayenne Turbo Electric (WLTP)*: Electrical consumption combined: 22.4 – 20.4 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A

Sports car performance with new drive system and innovative cooling

24/07/2026 Sports car performance with new drive system and innovative cooling

As Porsche's most powerful production model to date, the all-electric SUV offers performance on a par with supercars. The all-electric Cayenne line-up comprises three models each for the SUV and Coupé – all featuring all-wheel drive and, therefore, equipped with electronic Porsche Traction Management (ePTM). Porsche uses permanent magnet synchronous electric motors (PSM) on both the front and rear axles.

- **Cayenne (Coupé) Electric** (**Cayenne Coupé Electric (WLTP)*:** Electrical consumption combined: 21.3 – 19.2 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A) with 300 kW (408 PS), overboost power with Launch Control 325 kW (442 PS), 0–100 km/h in 4.8 seconds, top speed 230 km/h,

- **Cayenne S (Coupé) Electric** (**Cayenne S Electric (WLTP)*:** Electrical consumption combined: 21.6 – 19.5 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A) with 400 kW (544 PS), overboost power with Launch Control 490 kW (666 PS), 0–100 km/h in 3.8 seconds, top speed 250 km/h
- **Cayenne Turbo (Coupé) Electric**(**Cayenne Turbo Coupé Electric (WLTP)*:** Electrical consumption combined: 22.0 – 20.0 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A) with 630 kW (857 PS), overboost power with Launch Control 850 kW (1,156 PS), 0–100 km/h in 2.5 seconds, top speed 260 km/h

The Cayenne Turbo (**Cayenne Turbo Electric (WLTP)*:** Electrical consumption combined: 22.4 – 20.4 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A) achieves outstanding performance figures, accelerating from 0 to 200 km/h in 7.4 seconds. This outstanding electric performance is made possible by a newly developed drive system that develops up to 850 kW (1,156 PS, (WLTP): Electrical consumption combined: 22.4 – 20.4 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A) of power and up to 1,500 Nm of torque when Launch Control is activated. The direct oil cooling of the electric motor on the Turbo's rear axle ensures high continuous power output. The system is an innovation carried over from motorsport. Featuring an electric motor with a diameter of 245 mm and a length of 190 mm, and combined with a 940-amp silicon carbide pulse-inverter, the rear-axle assembly of the Cayenne Turbo features what is currently the most powerful electric drive system from Porsche – developed in-house in Weissach and manufactured in Zuffenhausen. On the front axle is an electric motor with a diameter of 210 mm and a length of 150 mm, coupled with a 480-amp silicon carbide pulse-inverter. In the Normal drive mode, the Turbo delivers up to 630 kW (857 PS), and an additional 130 kW (176 PS) can be called upon for 10 seconds at the touch of a button with the Push-to-Pass function.

Like in the Cayenne Turbo, the electric motor on the rear axle of the Cayenne S (**Cayenne S Electric (WLTP)*:** Electrical consumption combined: 21.6 – 19.5 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A) features direct oil cooling, ensuring exceptionally high performance combined with high efficiency. The electric motor on the rear axle has a diameter of 245 mm, a length of 140 mm and a 620-amp silicon carbide pulse inverter. This drive unit delivers significantly more power and torque than the front-axle motor, emphasising the sporty, rear-biased design of the Cayenne S Electric.

The front-axle motor in the Cayenne and Cayenne S has a diameter of 210 mm, a length of 100 mm and a 350-amp pulse inverter. In the entry-level Cayenne model, the drive system is supplemented on the rear axle by an electric motor with a diameter of 210 mm and a length of 200 mm, featuring a 480-amp silicon carbide pulse inverter.

In the fully electric Cayenne models, the front electric motor is switched off during partial-load operation, meaning it no longer provides any torque. Propulsion is then provided solely by the electric motor on the rear axle, which improves efficiency.

Motorsport technology: direct oil cooling for the electric motor

A special feature of the electric drive unit on the rear axle of the Cayenne S and Cayenne Turbo is the direct oil cooling. All the current-carrying components are cooled directly. Porsche brought this innovation to the racetrack in Formula E, and now this technology is coming to series production. Direct oil cooling enables a high efficiency of up to 98 per cent in real-world operation, combined with high peak and continuous power output. In conventional electric motors, the coolant flows through a jacket outside the stator, while with direct cooling the coolant flows directly along the copper windings. In this way, the heat can be dissipated directly from where it is generated. To achieve the same efficiency and performance figures, a motor cooled using a water jacket would also have to be approximately 1.5 times larger.

A synthetic, non-conductive oil is used for immersive cooling of the electric motor: Mobil 1 Therm Electric P, a special dielectric fluid developed by Exxon Mobil. It is non-corrosive and, crucially, has a very low viscosity. Its kinematic viscosity[1] at 100 degrees Celsius is only 1.7 mm2/s which means that it is about five times freer flowing than engine oil with a viscosity grade of 20 at the same temperature. About six litres of coolant are circulated, but an oil change is not necessary over the system's entire life cycle. Mobil 1 Therm Electric P and the gear oil for the single-speed transmission system flow in separate circuits but are circulated by a common oil pump, saving both space and weight.

Compact transmission and rear-biased weight distribution

Power is transmitted to the wheels on the front and rear axles via a two-stage single-speed transmission. This enables a compact and lightweight design. For the Cayenne, Porsche has further developed the 'performance rear end' that was introduced in the all-electric Macan. The drive unit is now mounted to the rear subframe, further increasing ride comfort. The position of the electric motor on the rear axle has been retained, which is set far to the rear, ensuring a slightly rear-biased weight distribution.

Up to 600 kW recuperation power – equivalent to Formula E

The all-electric Cayenne reaches new standards in recuperation; energy can be recovered at a rate of up to 600 kW via the brake pedal, depending on the speed, temperature and the state of charge of the battery.

The level of recuperation in the Cayenne Electric therefore matches that of the Porsche 99X Electric, with which the sports car manufacturer competes in the Formula E racing series. Recuperation is also active during more dynamic driving, meaning that around 97 per cent of braking operations in everyday use are taken care of by the electric motors alone, without using the friction brakes. Depending on the particular braking manoeuvre, the recuperation can even be used to bring the car to a complete stop. As soon as the deceleration exceeds the recuperation limit, the friction brakes are applied – virtually imperceptibly to the driver.

The driver can also activate 'overrun' recuperation. The centre display can be used to select the three levels 'On', 'Off' or 'Auto':

- In 'On' mode, releasing the accelerator pedal initiates recuperation at a moderate rate of 0.5 m/s^2. This is roughly equivalent to the deceleration experienced from engine braking in a combustion-engined car. In the Sport Plus drive programme, this rate is increased to 0.8 m/s2 for the benefit of driving dynamics. This setting suits keen drivers who appreciate maximum feedback.
- In 'Off' mode, the vehicle coasts without applied deceleration – ideal for an economical driving style.
- The 'Auto' mode allows the vehicle to coast freely in flowing traffic. As soon as a vehicle is detected in front, the 'overrun' recuperation automatically decelerates at a rate of up to 1.5 m/s^2.

ePTM enables impressive off-road capability

The Cayenne opens up a new dimension, not just in terms of longitudinal and lateral acceleration. Its off-road capabilities are also remarkable, giving even less experienced drivers a constant feeling of confidence and safety. Due to the nature of electric motors, the drive system offers high torque right from a standstill. When stopping or setting off on a hill, this torque can also be very precisely regulated. Roling backwards unintentionally is prevented by halting the electric motor in place, a function that has been specially integrated by Porsche.

The electronically controlled Porsche Traction Management (ePTM) reacts about five times faster than a conventional all-wheel drive system. Within five milliseconds, it responds to a variety of input variables such as acceleration, drive torque, vehicle speed and traction slip, and it can adjust the torque distribution to suit the particular driving situation as required.

---

[1]Generally speaking, viscosity describes the flow behaviour of a liquid. Kinematic viscosity is a term used to express internal friction of a fluid. It indicates how fast a liquid can be subjected to gravity flows along a defined route.

MEDIA ENQUIRIES

Ben Weinberger

Spokesperson Cayenne und Macan
+49 (0) 170 / 911 2097
ben.weinberger@porsche.de

Consumption data

Cayenne Electric (WLTP)*: Electrical consumption combined: 21.8 – 19.7 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A

Cayenne Turbo Electric (WLTP)*: Electrical consumption combined: 22.4 – 20.4 kWh/100 km; CO_2 emissions combined: 0 g/km; CO_2 class: A

*Further information on the official fuel consumption and the official specific CO_2 emissions of new passenger cars can be found in the "Leitfaden über den Kraftstoffverbrauch, die CO_2-Emissionen und den Stromverbrauch neuer Personenkraftwagen" (Fuel Consumption, CO_2Emissions and Electricity Consumption Guide for New Passenger Cars), which is available free of charge at all sales outlets and from DAT (Deutsche Automobil Treuhand GmbH, Helmuth-Hirth-Str. 1, 73760 Ostfildern-Scharnhausen, www.dat.de).

Video

https://newstv.porsche.com/porschevideos/newstv.porsche.com_327847_en.mp4

Link Collection

Link to this article
https://newsroom.porsche.com/en/press-kits/Cayenne-Electric-and-Cayenne-Coupé-Electric/Powertrain.html