PORSCHE

Porsche e-mobility

Direction: Future

Contents

A subject that always excites our engineers: the future.

Porsche and e-mobility.

We build sports cars. Always have done. The impulse to move forward, to be faster, to come first is therefore established deep in our genes – not only when it comes to crossing the finishing line, but also, and especially, when it comes to ideas.

So it is normal for us to go in new directions and to think about successful concepts while doing so. Because our engineers are seldom content with the here and now. They always want to be one step ahead. Otherwise the 918 Spyder would never have gone into series production. A super sports car – and a plug-in hybrid.

Hybrid technology and mobility. For us at Porsche, it's about nothing less than proving that efficiency and sports performance can go hand in hand. Which is why we are going even further in the development of our drive concepts. And yet it's about more than putting together our different types of drive. It's about making mobility in the 21st century a subject that will continue into the future. The Porsche way. With racing sport experience for series production. With more ideas per hp. Our solution is e-mobility.

A plug-in hybrid that can be charged from the mains, our E-Hybrid pools all of the know-how we have acquired so far and will continue to shape the future of Porsche e-mobility. This means combining forward-looking drive concepts and clever charging systems with in-car functions that can be controlled from a smartphone. It offers greater efficiency and suitability for everyday use by the driver. But with acceleration and performance that are anything but everyday.

New ideas will bring us to our destination – and then take us further. With e-mobility, we are on a journey. Direction: Future.

For fuel consumption, CO_2 emissions, power consumption and efficiency class, please refer to pages 54–55.

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1 Cayenne S E-Hybrid
2 Panamera S E-Hybrid
3 918 Spyder

Why do we build sports cars? To get there quickly.

The route to e-mobility.

Everybody is talking about e-mobility. Finally people are asking for ways to resolve one of the greatest challenges of our time: is there a replacement for our scarce petroleum resources? How can CO_2 emissions be reduced? Can we lower the demand for energy?

One approach is sustainable mobility. E-mobility, therefore, replaces oil with renewable electricity. Thereby reducing fuel consumption, CO_2 emissions and overall energy consumption.

In specific figures, this means that, to cover the same distance, a car running on electricity requires only about one quarter of the energy of a combustion engine.

So far, so visionary. The electric motor – we call it an e-drive – is already making full use of this potential: with immediately available torque for spontaneous response and high performance with the utmost level of efficiency. Now we have to focus on the strength of the battery so that cars running purely on electricity will be able to go much further.

It is extremely suitable for everyday use thanks to the combination of combustion engine and e-drive with external charging. So, with plug-in hybrid technology we are already enjoying the advantages of e-mobility today. With the performance that you rightly expect of a Porsche.

So, let's take stock: our E-Hybrid cars show what technology is already capable of today. But we are not resting on our laurels. We are continuing to work on the future of mobility and on the future of the sports car. Because we firmly believe that common sense can be fun and that fun can also make sense. Especially in a Porsche.

For fuel consumption, CO_2 emissions, electric range, electricity consumption and efficiency class, please refer to pages 54–55.

Environment versus performance. Both win.

The concept.

Porsche e-mobility is providing the answers. Not some time in the future, but right now. Because global fuel consumption and CO_2 emissions must be reduced. We believe that, as a sports car manufacturer, we should start where we can actually make a change: in the everyday life of our drivers – with an intelligent concept.

Let's take an example: with the e-mobility concept, filling up at the petrol station is increasingly replaced by charging with electricity. Not just anywhere, but especially at home. This requires a reliable charging infrastructure where you can conveniently fill up with electricity. For us, it goes without saying that we should provide you with the charging equipment at the same time. With Porsche Design, of course.

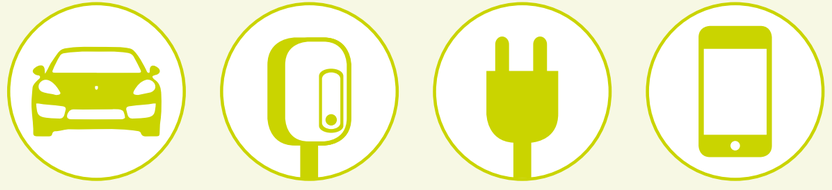
Another example: not all electricity is the same. It has the greatest environmental benefits when it is generated from renewable sources. So, in a few countries, we have negotiated special tariffs for you to use renewable power. More proof of this is that, according to our definition, e-mobility does not end at the vehicle charge port on your Porsche.

This is why connectivity plays a crucial role. With our E-Mobility Services as part of Porsche Car Connect, you can control specific functions via your smartphone, and gain access to important information, e.g. by displaying the battery's current state of charge or the car's remaining range.

The components.

The icons opposite symbolise the component parts of Porsche e-mobility. On the following pages of this brochure, we explain in more detail what they stand for and what possibilities Porsche e-mobility can offer you. Together they embody a concept that will point to new directions in everyday driving and in sports car philosophy.

Porsche e-mobility



Car

Charging infrastructure

Electricity

Connectivity

Car.

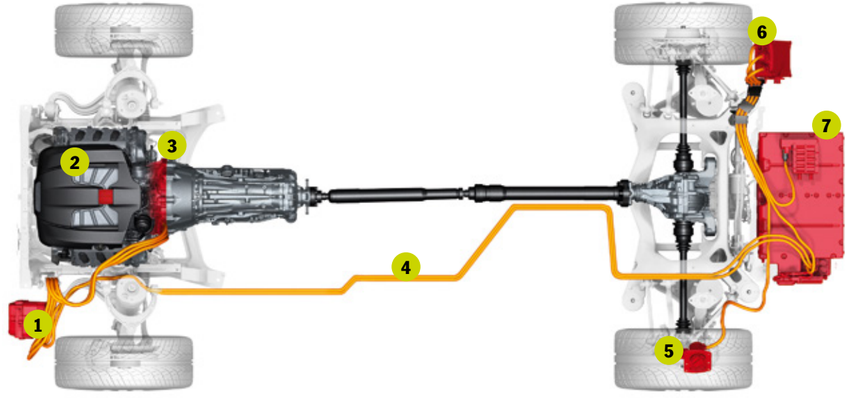
Naturally we're power conscious. But that doesn't rule out being conscious of our responsibility. Our E-Hybrid models, therefore, combine typical Porsche performance with no less typical Porsche thoughts about efficiency. Thereby releasing the electrifying feeling of driving a Porsche.

Car.

The heart of Porsche e-mobility is the car. The plug-in hybrid. Or rather the E-Hybrid. The foundation for this was laid by hybrid technology with two types of intelligent drive. Because a drive concept that optimally combines high performance, utmost efficiency and suitability for everyday use could only be achieved by the seamless interaction of the combustion engine and the electric motor.

'E-Hybrid' stands for the combination of a future-oriented drive with the comprehensive concept of e-mobility. Based on a high-voltage lithium-ion battery that can be charged from the mains; thanks to its considerably greater energy content, the electric range is significantly longer compared to conventional nickel metal hydride batteries. The powerful, high-torque electric drive ensures appropriate electric performance. A new type of purely electric driving experience is possible, especially city driving, without any fuel consumption or local emissions.

The electric motor and combustion engine are still mechanically connected directly to the axles, so that the typical Porsche power can be called upon at any time: via the combustion engine or, for especially sporty driving, both drives together – the so-called boost.



Schematic showing an example of the Panamera S E-Hybrid

1 Power electronics
2 Combustion engine
3 Electric motor
4 High-voltage cable
5 Vehicle charge port
6 On-board charger
7 Lithium-ion battery

Types of driving.

A Porsche E-Hybrid has five main types of driving. They are controlled automatically and according to requirements. The future-oriented drive concept can then make full use of the potential – and you can concentrate on what's important: enjoying the drive.

Electric

- The car is driven exclusively by the electric motor
- **For emission-free driving without consuming any fuel**

Combustion engine

- The car is driven by the combustion engine
- Depending on its state of charge and load requirements, the battery can also be charged
- **For long journeys and high speeds**

Boost

- The car is driven by the electric motor and the combustion engine
- 'Kicking down' on the accelerator pedal calls up the car's maximum power (boost)
- **For greater performance and dynamic response, when overtaking for example**

Recovery (of braking energy)

- When you brake, the electric motor works like a generator to produce electricity
- The combustion engine is automatically switched off
- **Recovering braking energy that would otherwise be lost – it can be used again later for electric driving**

Coasting

- The combustion engine is automatically switched off and disengaged when you take your foot off the accelerator pedal while driving
- Some energy is recovered to support the car's electrical system
- **For emission-free cruising and without consuming any fuel**

Driving modes.

With a Porsche E-Hybrid you can remain in control. With the Cayenne S E-Hybrid and the Panamera S E-Hybrid, the different driving modes allow you to control certain hybrid-specific types of driving (see pages 14/15).* You can then deliberately play out their corresponding strengths, in certain conditions, allowing you to experience their individual benefits. Although, ultimately, you are still always driving a Porsche.

1. E-Power

- E-Power mode (electric driving) is activated as standard. Every journey starts with electricity alone
- Fully electric drive with high-torque electric motor for an intensive driving experience without using any fuel, e.g. for driving through town or on the way to work
- With kickdown, the power available from the whole system, including the combustion engine can be called upon at any time

2. Hybrid

- Hybrid mode is active when no other mode has been explicitly selected or when E-Power mode has been deactivated
- The management system is set to maximum efficiency
- Driving on electricity with less power, e.g. when approaching a traffic light

3. E-Charge

- E-Charge mode can be activated at the press of a button
- The high-voltage battery is charged while driving by the combustion engine which generates more power (principle of changing load point)
- Useful for charging while driving, e.g. on motorways, for instance when there is a city route coming up where you will want to drive on electricity

4. Sport

- In Sport mode, the boost is activated when the gas pedal position reaches 80 % – combustion engine and electric motor develop the full performance potential together
- For dynamic driving with a suitable gas pedal characteristic, maximum power and maximum torque
- Sport Plus mode available as an option

*Information on the 918 Spyder's driving modes is given on page 28.

1 Panamera S E-Hybrid: E-Power and E-Charge button
2 Cayenne S E-Hybrid: SPORT button and SPORT PLUS button

Displays.

The main information about your car is always in view – clearly and concisely. This is ensured by the intelligent linking of different information systems in the Porsche E-Hybrid models: in the instrument cluster, on the screen of Porsche Communication Management (PCM), which is available as an option, on the vehicle charge port or on your smartphone.

1. Power meter in the instrument cluster

- The ready display provides information on the operating status
- Displays the current system power
- Boost and recovery range can be seen

2. Colour display in the instrument cluster

- Represents the energy flow
- Can be used to program three charge and pre-climatisation timers and a separate pre-climatisation timer
- Displays useful information, such as the electric range

3. Porsche Communication Management (PCM)

- Shows a detailed graphic of the car, indicating energy flows
- Shows detailed statistical values such as the proportion of driving without the combustion engine (zero emissions) and average consumption

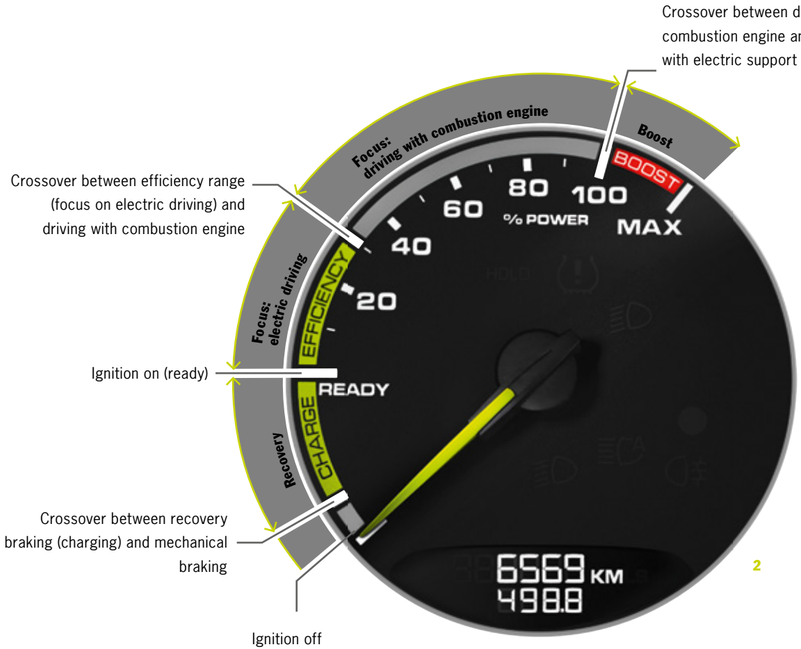
4. State of charge display on the charging socket

- Provides information on the car's state of charge and shows whether it is connected to the mains
- The state of charge LED pulses when charging – the slower the pulsing, the fuller the battery
- The charge timer button can be used to activate time-controlled charging – or to start charging straight away

5. E-Mobility Services (smartphone app)

- Provides information on the current status of the car
- Can be used to check the charging processes and other specific functions
- More on page 46

1 Instrument cluster
2 Power meter in the instrument cluster




e-hybrid
S VM 4105
S VM 988

An alternative drive.
When it comes to sports performance, there is more than just one alternative.

The new Cayenne S E-Hybrid.

Our path to the future is both forward-looking and dynamic. Because we are only content when we are not satisfied. And we even question things that have been long established. Because we can. Because we want to. And because we do have an objective.

The result: the new Cayenne S E-Hybrid. One of the first plug-in hybrids in its class. With 306 kW (416 hp) total output. With a top speed of 243 km/h, fuel consumption of just 3.4 l/100 km and CO_2 emissions of 79 g/km. Yet another leap forward. For the Cayenne. For you. Right into the future.

Performance characteristics.

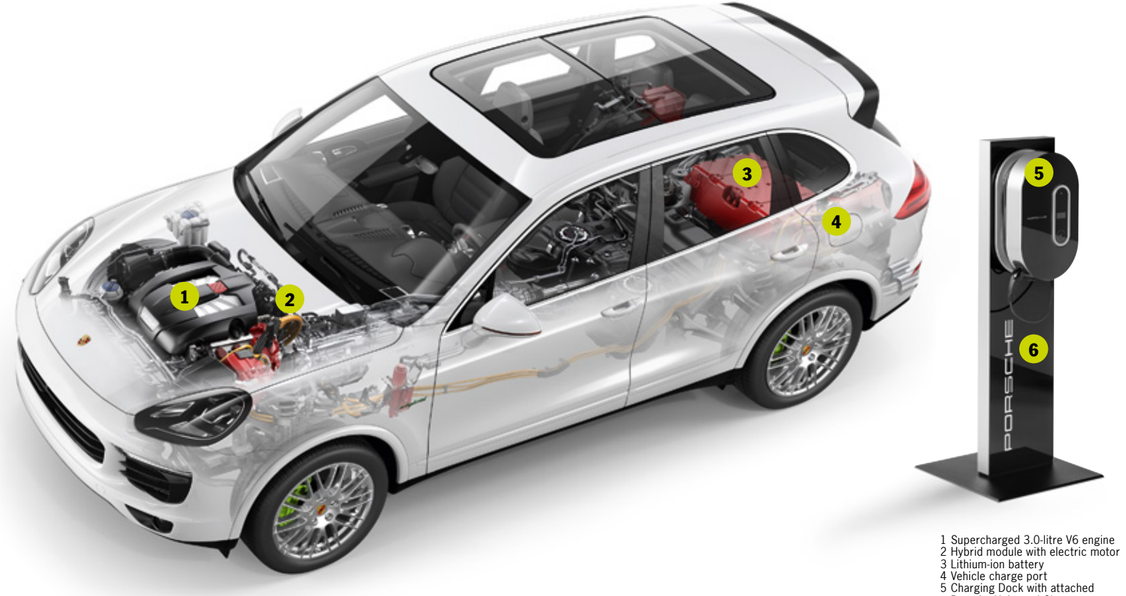
- Supercharged 3.0-litre V6 engine
- System power 306 kW (416 hp)
- Combustion engine 245 kW (333 hp)
- Electric motor 70 kW (95 hp)
- 0–100 km/h in 5.9 secs
- Top speed 243 km/h
- Top speed (electric) 125 km/h
- Typical electric range 18–36 km
- 10.8-kWh lithium-ion battery
- On-board charger with 3.6 kW (7.2 kW available as an option)
- Charging time approx. 2.7 h* (approx. 1.3 h with the 7.2 kW charger)*

Other equipment features.

- 8-speed Tiptronic S
- All-wheel drive
- Porsche Universal Charger (AC)
- Charging Dock
- E-Mobility Services (smartphone app)
- Differentiation features in Acid Green

* When connected to an industrial electrical outlet.

For fuel consumption, CO_2 emissions, electric range, electricity consumption and efficiency class, please refer to pages 54–55.



1 Supercharged 3.0-litre V6 engine
2 Hybrid module with electric motor
3 Lithium-ion battery
4 Vehicle charge port
5 Charging Dock with attached Porsche Universal Charger
6 Charging pedestal (optional)

Every relationship thrives on its tension.

The Panamera S E-Hybrid.

The Panamera S E-Hybrid combines efficiency and dynamics, good sense and desire, tradition and vision. And, with its innovative battery technology and a powerful electric drive, it is causing a small revolution in terms of alternative drives and is setting standards and opening up an exciting chapter in the sports saloon segment.

This has resulted in a total concept that intelligently links driver and car. The Panamera S E-Hybrid shows its athletic nature with a system power of 306 kW (416 hp). And, with an average fuel consumption of only 3.1 l/100 km and CO_2 emissions of 71 g/km, it underlines the latest developments in forward-looking technologies. With convincing results, in sport and in efficiency.

Performance characteristics.

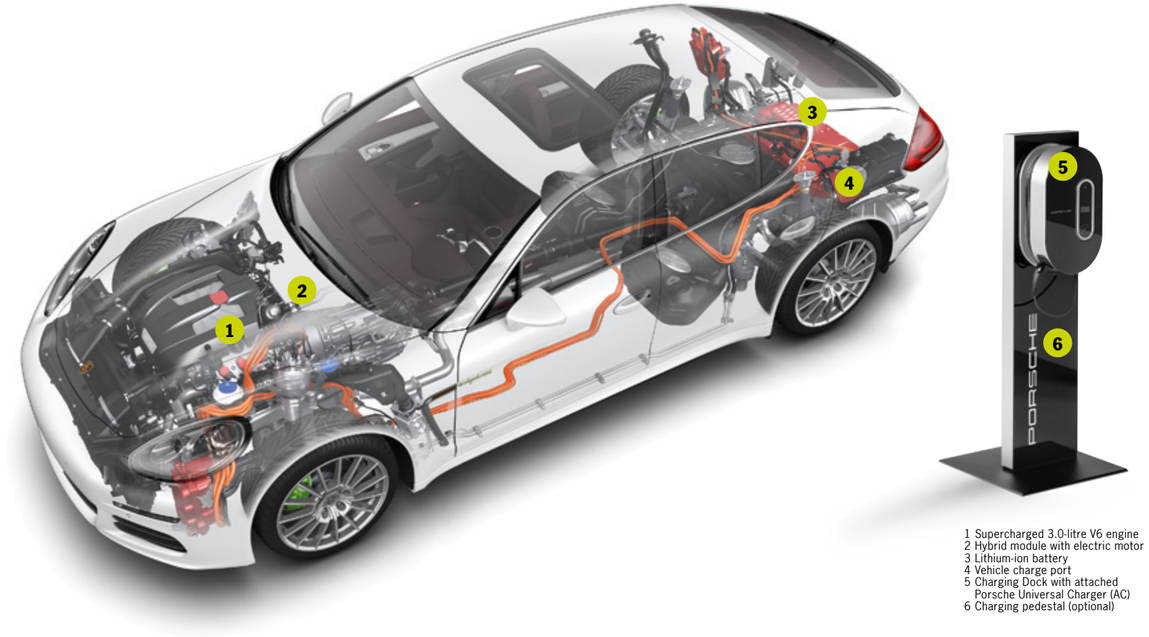
- Supercharged 3.0-litre V6 engine
- System power 306 kW (416 hp)
- Combustion engine 245 kW (333 hp)
- Electric motor 70 kW (95 hp)
- 0–100 km/h in 5.5 secs
- Top speed 270 km/h
- Top speed (electric) 135 km/h
- Typical electric range 18–36 km
- 9.4 kWh lithium-ion battery
- On-board charger with 3.6 kW (7.2 kW available as an option)
- Charging time approx. 2.3 h* (approx. 1.1 h with 7.2 kW charger)*

Other equipment features.

- 8-speed Tiptronic S
- Rear-wheel drive
- Porsche Universal Charger (AC)
- Charging Dock
- E-Mobility Services (smartphone app)
- Differentiation features in Acid Green

* When connected to an industrial electrical outlet.

For fuel consumption, CO_2 emissions, electric range, electricity consumption and efficiency class, please refer to pages 54–55.



1 Supercharged 3.0-litre V6 engine
2 Hybrid module with electric motor
3 Lithium-ion battery
4 Vehicle charge port
5 Charging Dock with attached Porsche Universal Charger (AC)
6 Charging pedestal (optional)

Just what the old dream of the sports car needed: a new initial spark.

The 918 Spyder.

It's not the easiest task, writing sports car history while simultaneously redefining the future of the sports car. But our engineers would not be satisfied with anything less. It's no wonder then that the 918 Spyder has inherited the legendary racing sport genes of the Porsche 917 and the RS Spyder – and is interpreting them in its own quite unique and forward-looking way.

With the 918 Spyder, we are exploring the heights of supreme performance to which hybrid technology can go. Conceived as a plug-in hybrid from the outset and designed for lightweight construction, the way in which the three drive units are arranged and how they interact make it a performance hybrid. And show that e-mobility gives us more than just one direction to follow. With a total power of 652 kW (887 hp), with fuel consumption of just 3.1 l/100 km or 3.0 l/100 km in the 918 Spyder with Weissach package.

Today, the 918 Spyder is already an inspiration for generations of cars to come. For what we have given to the automotive high end, and resolutely pursued throughout the entire phase of its emergence, is a future model in terms of performance. Or, quite simply, a super sports car in the form of an E-Hybrid.

Performance characteristics.

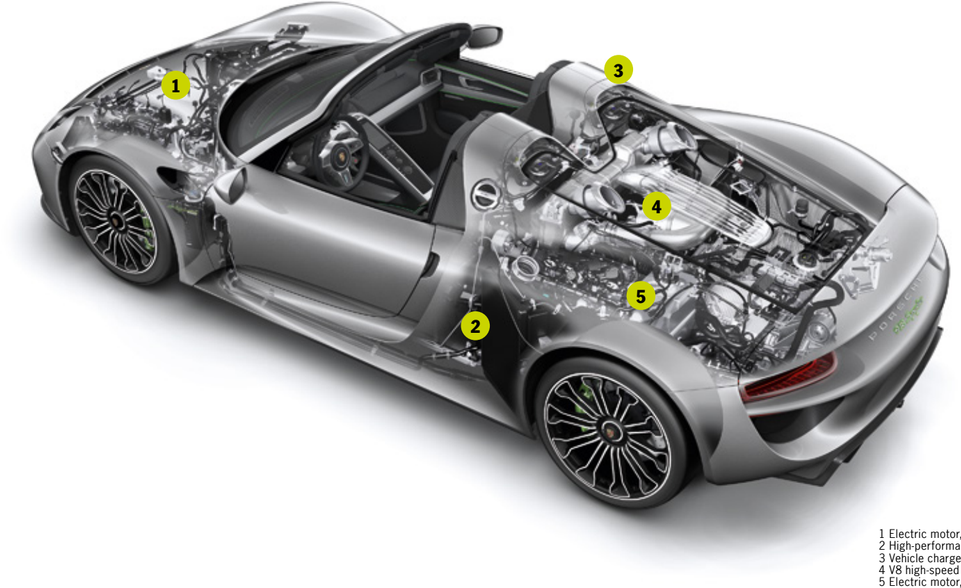
- 4.6-litre V8 high-speed engine
- System power 652 kW (887 hp)
- Combustion engine 447 kW (608 hp)
- Front electric motor 95 kW (129 hp)
- Rear electric motor 115 kW (156 hp)
- 0–100 km/h in 2.6 secs
- 0–60 km/h in 3.0 secs (electric)
- Top speed 345 km/h
- Top speed (electric) 150 km/h
- 6:57 min Nordschleife lap time (918 Spyder with Weissach package)
- Typical electric range 16–31 km
- 6.8 kWh high-performance lithium-ion traction battery
- On-board charger with 3.6 kW
- Charging time approx. 1.7 h with Porsche Universal Charger (AC)*
- Charging time approx. 15 min (80 %) with Porsche Speed Charging Station (DC)

Other equipment features.

- 7-speed Porsche Doppelkupplung (PDK)
- High-performance hybrid brake system
- Electric all-wheel drive
- Porsche Universal Charger (AC)
- Charging Dock
- Porsche Speed Charging Station (DC) (optional)
- E-Mobility Services (smartphone app)

* When connected to an industrial electrical outlet.

For fuel consumption, CO_2 emissions, electric range, electricity consumption and efficiency class, please refer to pages 54–55.



1 Electric motor, front axle
2 High-performance lithium-ion battery
3 Vehicle charge port
4 V8 high-speed engine
5 Electric motor, rear axle

The 918 Spyder was born on the racetrack. You can sense this in every fibre of the interior. The principles employed here are lightness, elimination of excess ballast, outstanding ergonomics and quick readability. The pure spirit of motorsport.

As an E-Hybrid designed for pure performance, the 918 Spyder also has particular driving characteristics. The various driving modes – and adrenaline levels – of your choice are activated by means of the map switch on the sports steering wheel.

1. E-Power (E)

→ E-Power is the default operating mode at a standing start. The vehicle drives on electric power alone. The combustion engine is switched on only in response to driver input, i.e. kickdown

2. Hybrid (H)

→ In Hybrid mode, the 918 Spyder is powered by the electric motors or the combustion engine in a way that achieves optimum fuel consumption. For a conservative, economy-oriented driving style, e.g. in city traffic, or efficiency-enhanced motoring on major roads

3. Sport Hybrid (S)

→ In Sport Hybrid mode, the combustion engine is always in operation. Support is provided by the electric motors and their e-boost capability. For a sporty driving style

4. Race Hybrid (R)

→ The combustion engine is always in operation. The electric motors are allowed to deliver their maximum available power. A higher proportion of the power generated by the combustion engine goes into recharging the battery. Gearshifts are extremely fast and sporty and the torque potential of the engine is optimally exploited. For superlative performance

Hot Lap configuration (red button)

→ When you press the Hot Lap button in Race Hybrid mode, the maximum energy potential of the high-performance traction battery is harnessed to help you achieve the fastest possible lap time

Charging infrastructure.

Recharging the battery. Whether at home or on the road. Basically, it's a question of having the right charging infrastructure and car concept.

Charging infrastructure.

In our opinion, an innovative car concept is of no value if it ends with the car. E-mobility therefore includes the infrastructure: an optimally integrated vehicle charge port, practical charging equipment and intelligent charging options, to use at home and on the road.

Vehicle charge port.

The vehicle charge port connects the car to the electricity infrastructure. Once plugged in, the vehicle plug is automatically identified by the car and locked.

The car is now secured against being driven off. The charging process starts immediately. If you enter a time in the instrument cluster by when the battery should be charged, if the charge timer is activated the charging process will start later. So that you can take advantage of cheaper night-time tariffs, for example.

Two LEDs show the mains connection status and the battery's state of charge. When you open the car with the key, the charging process is stopped and the vehicle plug released.

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Porsche Universal Charger (AC) including Charging Dock.

New standards are being set by the charging equipment that has been developed by Porsche itself. You can use it to charge your car at home and on the road quite safely, quickly and conveniently.

The standard Porsche Universal Charger (AC) establishes a secure connection between different electrical sockets and your car. Charging normally starts automatically when it is plugged in. However, if a problem should arise – e.g. because of a defective socket – clear instructions will appear on the display.

The Charging Dock has been specially created by Porsche Design. As a practical wall mount for the Porsche Universal Charger (AC), it is like having a private filling station – for your Porsche. The Porsche Universal Charger (AC) can be easily stowed in the transport case for use on the road. If you want to charge your car abroad, you can opt for an appropriate adapter cable – for all common electrical sockets throughout the world.

1 Vehicle charge port
2 Porsche Universal Charger (AC) including control unit, vehicle and mains cable
3 Charging Dock with attached Porsche Universal Charger (AC)

Charging pedestal.
The optional charging pedestal is a practical mount made from black safety glass, with an aluminium frame and silver-coloured ‘PORSCHE’ logo.
Developed especially for Porsche as a safe a convenient means of mounting the Charging Dock, the charging pedestal is recommended, in particular, when the Charging Dock cannot be mounted on the wall or, for example, if you would like to have a charging station for your carport.

Public charging facilities.
To ensure you always have flexibility, you can also charge your Porsche E-Hybrid at public charging stations. If the charging station does not have its own charging cable, the optional charging cable (mode 3) from Porsche Tequipment means that you can still charge your car quickly and conveniently.

The black charging cable is 7.5 m long and supports the charging capacity appropriate to the on-board charger. The cable can be stowed neatly in the luggage compartment of your car using the carrying case, with special fastener, provided.

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Porsche Speed Charging Station (DC).
Available as an option exclusively for the 918 Spyder is the especially powerful Porsche Speed Charging Station (DC) which comes with a 20-kW rating and typical Porsche design. It is intended for permanent installation and is extremely safe to use.

During DC charging, alternating current (AC) is already converted into direct current (DC) outside the vehicle. This reduces charging time to less than half an hour. Charging to 80% of maximum charge is achievable within around 15 minutes. So that the future is not long in coming.

1 Charging Pedestal
2 Charging cable (mode 3) including carrying case
3 Porsche Speed Charging Station (DC)

Charging at home.

- To charge your car quickly and conveniently at home we recommend you install an industrial electrical outlet and the Charging Dock
- You can connect the Porsche Universal Charger (AC) to the heavy current socket and place it in the Charging Dock
- Your Porsche Centre can provide you with information on professionally accredited electricians near you. If required, the Porsche Centre will assist you in contacting the professionally accredited electrician of your choice
- The Charging Dock is installed, e.g. on a wall close to the vehicle parking spot. You can now charge your car even more conveniently and quickly at home

Charging on the road.

- Close to shopping centres, in car parks or at the roadside: a lot of cities now already have public charging stations that you can use
- With the increasing number of plug-in hybrid and electric vehicles, the number of charging stations is also continuing to increase
- Alternatively, you can charge your car using the Porsche Universal Charger (AC) at any suitable, professionally installed electrical socket, e.g. while at work or visiting friends. There are special easy-to-change plug adapters for this
- The charging equipment can be stowed in the transport case in the luggage compartment to save space

Electricity.

Efficient drives and lightweight construction are just a few examples of how consideration about the environment is a tradition at Porsche. Electricity from renewable sources is taking it into the future.

Electricity.

Electricity is the energy of the mobile future. It can be generated very efficiently, and without producing any CO_2 from renewable sources such as water, wind and sun. Thanks to efficient networks, electricity can also be transported over long distances with little loss and is available today, even in the world's less developed areas. In other words: if you want to drive and be CO_2 neutral, you must use renewable electricity.

Lithium-ion batteries can store increasing amounts of electricity in the car. High-performance electric motors convert it into driving torque – approximately four times more efficiently than a combustion engine. So electricity means more sustainable driving enjoyment.

Connectivity.

It's always a good feeling to know how things are going elsewhere. Even if not immediately in sight. But always in reach. With E-Mobility Services for example.

Connectivity.

E-Mobility Services are part of Porsche Car Connect and are a package of functions especially for our E-Hybrid vehicles. They include many options for controlling your Porsche, not just via the steering wheel, but also via smartphone. You can call up a variety of information and control individual functions. This service is included for five years when you purchase a Porsche E-Hybrid and can then be extended at a charge.

1. **State of charge**
   Monitor the state of charge of your E-Hybrid.

2. **Electric range management**
   Call up information on remaining electric range and total range.

3. **Charge timer with user-defined charging times**
   Control the charging process remotely with your smartphone.

4. **Parking pre-climatisation remote control**
   This function is available as an option (not for the 918 Spyder). You can use it to activate pre-climatisation inside your car from the outside – straight away or time-controlled. Whether it's hot or cold outside, bring the temperature inside the car to within a range that feels comfortable.

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E-Mobility Services are not available on all markets. Detailed information on availability in your country can be obtained from your Porsche Centre.

FAQ.

Questions about the car.

1. **What does ‘E-Hybrid’ stand for?**
   ‘E-Hybrid’ stands for the innovative plug-in hybrid drive from Porsche. A drive that combines combustion engine and electric drive, supported by a lithium-ion battery, which stores more energy and can be charged externally from the mains. This enables a relatively high proportion of electric driving with low emissions, yet the high performance that is typical of Porsche.

2. **Can I drive a car with plug-in hybrid drive like a conventional car?**
   Yes, the car's internal management system controls the interaction between the two types of drive almost automatically. To get the maximum benefit from electric driving (lower consumption and lower CO_2 emissions and more electric performance), the high-voltage battery should be charged externally from the mains.

3. **Who will find a plug-in hybrid drive useful?**
   Customers who do a high proportion of city driving will particularly benefit from low consumption and low CO_2 emissions because a lot of urban routes can be driven on electricity only. But the benefits of the hybrid drive, such as coasting and recovery (of brake energy), can be enjoyed on cross-country journeys as well. Powerful acceleration, on the motorway for example, is possible with a combination of both drives (boost).

4. **What is the car's fuel consumption in everyday driving?**
   Fuel consumption varies according to the style of driving and type of road. The higher the proportion of purely electric driving, the lower the fuel consumption and therefore CO_2 emissions.

5. **Does the high-voltage battery require any maintenance?**
   In a Porsche E-Hybrid, the high-voltage battery is a fixed part of the car. As with all high-voltage components, the high-voltage battery is maintenance-free.

6. **Are there any particular features about the maintenance and repair of E-Hybrid vehicles?**
   The people who work for our Porsche Partners are suitably qualified to ensure that vehicles and the high-voltage components are perfectly maintained and repaired. They are therefore the best prepared for the new requirements. All associated processes in the Porsche (Service) Centre are adapted to the new conditions and will therefore make certain that everything goes smoothly when it comes to servicing your car.

7. **How safe is the car in an accident?**
   Essentially the same high Porsche safety standards have been used as in models with conventional drive. There is a special crash housing to protect the high-voltage battery and, depending on the seriousness of the accident, the high-voltage system is disconnected in fractions of a second.

Questions about charging.

1. **How do I charge my car at home?**
   The quickest and most convenient way to charge your car at home is with the Porsche Universal Charger (AC), which is provided as standard, and its practical Charging Dock. Your Porsche Centre will assist you in contacting the professionally accredited electrician of your choice to have the necessary industrial outlet installed.

2. **How do I charge my car when on the road?**
   The quickest way of charging the car is at the public charging stations offered by various providers. A charging cable, which is available as an option, is required at some charging stations. With slower charging speeds, it is also possible to charge the car from a suitable, professionally installed and defect-free domestic electrical socket. Porsche recommend that you use the Porsche Universal Charger (AC), that is provided as standard, for this purpose.

3. **How long will my car take to charge?**
   The charging time depends on the size of the battery, the starting state of charge and the efficiency of the infrastructure. When connected to an industrial electrical outlet, a Cayenne S E-Hybrid can be fully charged typically in about 2.7 hours. Or in about 1.3 hours with the optional 7.2-kW on-board charger.

4. **How often do I have to charge?**
   To be able to enjoy the full benefits of the car, it is recommended that the car is charged, if possible, after every long journey – for example overnight. If there is no opportunity to charge the car, you can still remain fully mobile thanks to the combustion engine.

5. **How safe is charging?**
   Cars and charging equipment have been fitted with a lot of additional safety functions to make charging even safer than, for example, using electric domestic devices. Special attention has been paid to ensuring that cars can also be charged safely in wet weather. Nevertheless you should exercise the same caution when charging as you normally would when using electrical equipment.

6. **Who should I contact if I have any questions about using the charging equipment?**
   Your Porsche Centre is, of course, still your first point of contact for all questions regarding the car and will coordinate any further action if necessary.

7. **Can I also charge Porsche cars with charging equipment from other manufacturers?**
   Porsche follows the relevant country-specific charging standards for cars and charging equipment. Our products are essentially compatible with those of other manufacturers, provided they are based on the same standards. For optimum safety and comfort, however, we recommend using the charging equipment that has been optimised by Porsche for your car.

Questions about electricity.

1. **Does the extra electricity required for electromobility cause bottlenecks in the electricity supply?**
   No, even with an increasing number of chargeable cars, the electricity demand for electromobility compared to the electricity demand from industry and domestic purposes is still relatively low. Specifically charging when there is a low demand from other users (e.g. at night), makes better use of existing electricity generating plants.

2. **How environmentally friendly is driving with electricity?**
   To make full use of the environmental benefits of e-mobility, cars should preferably be charged with renewable electricity. The CO_2 emissions can then be reduced to almost zero in electric operation. At the same time, energy consumption drops by more than half compared with that of a combustion engine.

3. **How can I specifically use renewable electricity?**
   In a lot of countries you can select a tariff for renewable electricity. This usually requires changing electricity provider. A good provider of renewable electricity can be identified by the fact that it promotes the installation of new renewable electricity generating plants.

4. **Does Porsche offer renewable electricity itself?**
   In some selected countries, Porsche is already negotiating with providers of renewable electricity and routinely checks the spread to other countries. More detailed information is available from your Porsche Centre.

5. **How can I specifically use cheaper night-time electricity with my car?**
   The car gives you the option of setting the charging time yourself with a timer and therefore charging specifically when electricity is cheaper.

6. **Is it cheaper to drive with electricity than with fuel?**
   In most countries it is cheaper to drive with electricity than it is with fuel. However, the amount of the saving varies due to the rates of taxation on electricity and fuel that differ considerably from region to region.

Questions on connectivity.

1. **What is Porsche Car Connect?**
   Porsche Car Connect includes services that connect the car with the customer via a smartphone. The product includes Remote Services, Porsche Vehicle Tracking Services and special E-Mobility Services.

2. **Which E-Mobility Services are included in Porsche Car Connect?**
   The service includes functions for checking the state of charge, range management, and pre-climatisation remote control (not for the 918 Spyder).

3. **How does Porsche Car Connect work?**
   Once an agreement has been set up with our cooperation partner, a secure data connection will be established with a server which enables data to be exchanged with the smartphone.

4. **Which smartphone operating systems are supported?**
   Smartphones based on the Android® and iOS® operating systems are supported.

5. **How much does it cost?**
   The services can be used free of charge for five years. No further fees apply in respect of the car even when roaming. The services can be extended after that time. For further information on costs involved, please contact your Porsche Centre.

6. **In which markets is Porsche Car Connect available?**
   Porsche Car Connect is available in Europe, USA, South Africa and Russia. The product is constantly being extended. Detailed information on availability in your country can be obtained from your Porsche Centre.

Electric motor or combustion engine.
Coasting or dynamic driving.
Heart or mind.

The answer is still Porsche.

When we build a hybrid, we build it in the Porsche way. Because it's not just about horsepower or revs per minute, it is about using existing resources as efficiently as possible. For the overtaking lane – and for city traffic. We are constantly encountering contradictions. In truth: we look for them. In order to combine them. That is how we find new – and sometimes surprising – solutions for the future and for the driver. With e-mobility they have been given a name. A tangible concept that you can take onto the road yourself – and drive forward every day. Direction: Future. As the E-Hybrid.

Technical data.

	Cayenne S E-Hybrid	Panamera S E-Hybrid	918 Spyder/ 918 Spyder with Weissach package
Engine/Transmission			
Type/Cylinders	V6	V6	V8
Displacement	2,995 cm^3	2,995 cm^3	4,593 cm^3
Max. system power at rpm	306 kW (416 hp) at 5,500 rpm	306 kW (416 hp) at 5,500 rpm	652 kW (887 hp) at 8,500 rpm
Max. system torque at rpm	590 Nm between 1,250 and 4,000 rpm	590 Nm between 1,250 and 4,000 rpm	1,280 Nm (7th gear) > 800 Nm from 800 to 5,000 rpm
Max. power of combustion engine at rpm	245 kW (333 hp) between 5,500 and 6,500 rpm	245 kW (333 hp) between 5,500 and 6,500 rpm	447 kW (608 hp) at 8,700 rpm
Max. torque of combustion engine at rpm	440 Nm between 3,000 and 5,250 rpm	440 Nm between 3,000 and 5,250 rpm	540 Nm at 6,700 rpm
Max. power of electric motor at rpm	70 kW (95 hp) between 2,200 and 2,600 rpm	70 kW (95 hp) between 2,200 and 2,600 rpm	Front: 95 kW (129 hp) Rear: 115 kW (156 hp)
Max. torque of electric motor at rpm	310 Nm at < 1,700 rpm	310 Nm at < 1,700 rpm	Front: 210 Nm Rear: 375 Nm
Gearbox	8-speed Tiptronic S	8-speed Tiptronic S	7-speed Porsche Doppelkupplung (PDK)
Performance/Range			
Top speed	243 km/h	270 km/h	345 km/h
Top speed (electric)	125 km/h	135 km/h	150 km/h
Acceleration 0–100 km/h	5.9 secs	5.5 secs	2.6 secs
Typical electric range in everyday driving[1]	18–36 km	18–36 km	16–31 km

	Cayenne S E-Hybrid[2]	Panamera S E-Hybrid[2]	918 Spyder[3]/ 918 Spyder with Weissach package[3]
Fuel consumption/emissions, efficiency class[4]			
Type of fuel	Super unleaded (ROZ 95)	Super unleaded (RON 95)	Super unleaded (ROZ 98)
Combined fuel consumption (in l/100 km)	3.4	3.1	3.1/3.0
Combined CO_2 emissions (in g/km)	79	71	72/70
Electricity consumption combined in kWh/100 km	20.8	16.2	12.7/12.7
Efficiency class (Germany)[4]	A+	A+	A+/A+
Efficiency class (Switzerland)[4]	F	D	A+/A+

[1] The range of variation is due to driving style, traffic conditions, type of road, outside temperature, how many electricity consumers are in use (e.g. heating) and number of passengers and luggage. The value may also be below the range of variation. The upper value was determined in the standard cycle (NEDC) which enables comparison between different manufacturers.

[2] Data determined in the NEDC (New European Driving Cycle) in accordance with the Euro 6 (715/2007/EC, 195/2013/EC and ECE-R 101.01). The figures do not refer to an individual vehicle nor do they constitute part of the offer. They are intended solely as a means of comparing different types of vehicle. Fuel consumption calculated for vehicles with standard specification only. Actual consumption and performance may vary with items of optional equipment. A vehicle's fuel consumption and CO_2 emissions depend not only on its efficient use of fuel, but also on driving style and other non-technical factors. Current Porsche models with petrol engines are designed for fuel containing up to 10% ethanol. You can obtain further information about individual vehicles from your Porsche Centre.

[3] Data determined in the NEDC (New European Driving Cycle) in accordance with the Euro 5 (715/2007/EC, 692/2008/EC, 566/2011/EC and ECE-R 101). The figures do not refer to an individual vehicle nor do they constitute part of the offer. They are intended solely as a means of comparing different types of vehicle. Fuel consumption calculated for vehicles with standard specification only. Actual consumption and performance may vary with items of optional equipment. A vehicle's fuel consumption and CO_2 emissions depend not only on its efficient use of fuel, but also on driving style and other non-technical factors. Current Porsche models with petrol engines are designed for fuel containing up to 10% ethanol. You can obtain further information about individual vehicles from your Porsche Centre.

[4] Valid in the countries listed only.

The vehicle models shown represent the equipment for the Federal Republic of Germany. They might include individual pieces of equipment that are not included as standard and are only available at an extra cost. In different countries, not all models and equipment will be available because of country-specific conditions and requirements. Please find out about the exact range of equipment from your Porsche Centre. Details on design, the equipment included, appearance, performance, dimensions, weight, fuel consumption and operating costs represent current knowledge at the time of going to print (07/14). Changes to design, equipment and what is included, and differences in shade and errors excepted.

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