

THE NEW RENAULT CLIO E-TECH HYBRID, RENAULT CAPTUR AND RENAULT MEGANE E-TECH PLUG-IN HYBRID



PUTTING A UNIQUE HYBRID RANGE TO THE TEST

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Introduction

The car industry is being turned on its head, especially when it comes to engines. Together, the need for lower fuel consumption and CO₂ emissions, increasingly stringent anti-pollution standards and new consumer expectations are making electrification essential. As the pioneer in electric vehicles, Renault is enriching its range with an E-TECH hybridisation package that is absolutely faithful to its image: efficient, affordable and positioned in the core market on best-seller vehicles. This will make the electric experience and its driving pleasure accessible to the greatest number, at a time when customers are making increasingly pragmatic, smart, reasoned choices.

Three models form Renault 's new E-TECH hybrid and plug-in hybrid¹ range: the Clio E-TECH Hybrid (140hp, full hybrid), the New Captur E-TECH Plug-in Hybrid (160hp, plug-in hybrid) and the New Mégane E-TECH Plug-in Hybrid (160hp, plug-in hybrid). **This new E-TECH hybrid line-up can adapt to any customer's needs** (long distance, urban multi-purpose, etc.) depending on the preferred technology, while limiting CO₂ emissions and stemming fuel use, even for long trips. These three models join all-electric models like the New ZOE, New Twingo Z.E. and Kangoo Z.E, in what is already the largest electrified vehicle range on the market.

EV expertise

Groupe Renault is a **pioneer and expert in electric mobility** – the cornerstone of the Group's current and future commitment to sustainable mobility for all. For **more than 10 years**, the Group has garnered expertise in electric vehicles that translates into more dynamic and efficient hybrid motors.

Thanks to work carried out on developing true multi-modal hybrid motors, as opposed to merely fitting out traditional combustion motors with electric capabilities, E-TECH vehicles guarantee:

- Electric-only starting every time.
- Driving pleasure in all circumstances thanks to an increased electric range and capabilities, even when accelerating.
- Excellent fuel efficiency thanks to its innovative multimodal gearbox, efficient regenerative braking and high capacity battery recharging; all thanks to the combined expertise acquired on Formula 1 and electric vehicles.

With these assets, the Clio E-TECH Hybrid can be driven for up to 80% of the time on city roads in all-electric mode, with a consumption saving of up to 40% compared with a petrol engine in the urban cycle. The New Captur E-TECH Plug-in Hybrid and New Mégane E-TECH Plug-in Hybrid can run at 100% electric for 50 kilometres with a top speed of 135 kph in mixed use (WLTP) and 65 kilometres in urban use (WLTP City).

Innovative technology

The powertrain used in all Renault hybrid motors is available in **two variants: E-TECH Hybrid (full hybrid**, also known as HEV or hybrid) and **E-TECH Plug-in Hybrid (full plug-in hybrid**, also known as PHEV or plug-in hybrid). Integrating the new technology into these models is easy, thanks both to the new CMF-B and CMF-C/D modular architectures that were designed from the outset to house electric capabilities and the fact that E-TECH systems are more compact than ever before and can be mounted in the engine compartment of a versatile city car, such as the Clio.

¹ A plug-in (or rechargeable) hybrid vehicle has a battery that optimises driving in electric mode as it can be plugged into a socket for recharging. It has a greater electric range than a hybrid vehicle, where the battery recharges only while the car is being driven.

Renault engineers have devised a revolutionary solution for a hybrid range that is relevant, original, and exclusive – with more than **150 patents**. It is based on a **hybrid “series-parallel” architecture** to ensure the widest range of combinations of engine operations and the best CO₂ gains when on the road.

This hybrid technology also taps into the extensive knowledge base of the **Renault DP World F1 Team**. Production model hybrids share and benefit from **technology originally developed for F1 racing**.

Sustainable mobility for all

Groupe Renault strives **to provide sustainable mobility for all, both today and in the future**. The arrival of the latest batch of motors is a next step towards reaching that goal. By 2022, Groupe Renault plans to ramp-up its electric range with 8 fully electric models and **12 electric-capable models** (hybrid and rechargeable hybrids).

When race cars inspire production cars



Motorsport and Renault's involvement in Formula 1 are at the heart of the company's work on E-TECH hybrid motors. Bridges between the racing world and production vehicles fall into two main categories: energy use and recovery and the use of an innovative multi-mode dog gearbox, for the first time in a production vehicle.

Energy optimization at the heart of knowledge sharing

Ever since 2013, the Renault DP World F1 Team and Renault engineering have shared their respective knowledge in the field of energy management. To prepare the arrival of hybrid motors in Formula 1, engineers, experts in hybrid - now in charge of Renault E-TECH Hybrid models - worked on developing a Formula 1 hybrid motor at the Renault Viry-Châtillon site. There, they fine-tuned their energy management strategy now used in designing Renault's hybrid models.

It is mainly thanks to such knowledge sharing that E-TECH engines combine driving pleasure with high efficiency **in terms of energy regeneration and use.**

Be it a Formula 1 engine or an E-TECH production motor, the laws of energy management are designed to use the optimal energy output (thermal output versus amount of fuel used) to recharge the battery whenever the energy created is above the required power.

As in F1, kinetic energy can be recovered during deceleration and braking, then transformed into electrical energy to recharge the battery. On production vehicles, especially when on motorways, energy management rules start charging the battery by forcing the engine to operate its optimum RPM yield. Excess energy can then be used to back up the combustion engine during hard acceleration, or to ensure a 100% electric ride when the scheduled route goes through urban zones.

On production models with the E-TECH Plug-in Hybrid engine, the SPORT mode in multi-SENSE settings allows all the thermal and electrical power to be used simultaneously, thereby giving more driving pleasure and efficiency when accelerating. When considerable pressure is put on the accelerator, the two electric motors both provide additional power to the combustion engine. **Such a practice comes directly from Formula 1**, where drivers can put the car into a specific mode to get maximum available power, especially during qualifying laps.

Great responsiveness thanks to the innovative gearbox

The Renault E-TECH Hybrid engine **powertrain architecture** is based on similar foundations to that of the Renault DP World F1 Team's cars: a combustion engine combined with two electric motors and a central battery. This architecture is paired with a **multi-mode dog gearbox**.

When it accompanies electric motors, the clutch-less gearbox allows a 100% electric start. This **significantly reduces gaps in acceleration during gear changes**, which enhances driving comfort and performance while accelerating. **In F1**, the smooth gear changes mean less jerkiness and less loss of grip.



INTERVIEW

3 questions to Nicolas Espesson, Performance optimizer at Renault Sport Racing

what are the main points in common between the E-TECH engine of our production vehicles and the hybrid engine used by Renault in Formula 1?

First of all, both powertrains are made with similar major components. Each of them has one internal combustion engine, two electric motors and one battery. This innovative architecture opens lots of options in term of usage for each components. We can drive in full electric mode, like a ZOE, or only with the internal combustion engine, like a "normal" vehicle, or with a mix of these two modes in order to add, for example, the electric power to the one from the internal combustion engine.

This architectural similarity between a Formula 1 and a vehicle equipped with the E-TECH engine, allows us to use the available energy in the same way, whether it is electric or fossil energy. This energy management is very important and forces the battery to charge before being empty for example. It also injects the electricity into the electric motors when the battery is full to avoid burning fuel and therefore, reduce the fuel consumption and improve driving pleasure.

This unique architecture, linked with an intelligent energy management, allows us to significantly reduce fuel consumption.

What are the main advantages of this famous dog gearbox?

The dog gearbox is a gearbox which has a very good efficiency because it has no parts rubbing together inside. This technology has been used in F1 for a long time because it offers a very low friction level. Even more than in Formula 1, the biggest challenge for the E-TECH Hybrid engine was to offer a smooth shift, because the engine does not have a clutch. This is made possible thanks to the use of the 2 electric motors which very precisely regulate the speed of rotation of the gearbox, allowing the gears to change smoothly. The unique architecture of this gearbox, which has generated several very innovative patents, allows the electronic control unit of the car to choose in real time the best gear ratio to use, in order to gain efficiency while making these gear shifts transparent for the driver.

The solution combines the simplicity and excellent performance of a dog gearbox and hybrid technology with 2 electric motors assisting gear changes without a clutch!

Energy recovery and reuse are at the heart of the E-TECH hybrid system. Is the aim only to offer extra performance or is the field of use wider?

Obviously, we can use the electric motors to provide additional power and thus add the power of electric motors, to that of the internal combustion engine, and this is naturally what we do on hybrid vehicles, in F1 and also on the road. But on a production vehicle, we are rarely full, so we use this mode very little. But it exists.

Energy recovery during braking phases allows the battery to be recharged "freely", but it also avoids using the brakes and therefore wearing them.

Once this energy has been recovered, we will be able to re-use it, to move the car forward again when we want to restart ... and that without burning a single droplet of fuel. You can do up to 65km in WLTP cycle in this full electric mode with the New Mégane E-TECH Plug-in.

We can therefore drive in full electric mode, with the internal combustion only, especially on motorways, we can add electric and fuel power when we need a strong acceleration, to overtake for example ... But what is less easy to imagine is that you can recharge the battery while driving. This is what is called "overload" in the Formula 1 world. Obviously, the driver will not have to press the accelerator pedal and the brake pedal at the same time. But this "counter-intuitive" mode, where 1 engine accelerates and the other brakes, allows the car to move forward with the internal combustion engine, while recharging the battery with the electric motors which operates like an alternator. This operation also allows the internal combustion engine to improve its efficiency. As you can see, with this architecture, we have a large number of options for propelling the car, with electricity ... with fuel ... or even with both of them while choosing the best gearbox ratio. All of this, allows us to achieve levels of fuel consumption and driving pleasure that have never been seen before.

Renault E-TECH Hybrid, a dual engine combining responsiveness, driving pleasure, and efficiency

The Renault E-TECH system (hybrid and plug-in hybrid) was developed and patented by Renault Engineering. It is the heir of the EOLAB concept car, unveiled at the 2014 Paris Motor Show. Having undergone many tests in the course of its development, and with the benefit of a simple yet smart architecture and specific processes, it is designed for reliability and durability. The E-TECH system also benefits from the brand's electric expertise and uses parts designed within the Alliance, such as the **new-generation 1.6-litre petrol engine** that has been reworked specifically for the occasion. It is accompanied by **two electric motors – an “e-engine” and an HSG (High-voltage Starter Generator) – and an innovative multi-mode clutch-less gearbox**. The revolutionary association of the electric motors and the gearbox is optimal for smooth gear changes (an architecture that is synonymous with better fuel efficiency, it comes straight from the Renault DP World F1 Team's vast experience).



The capacity of the lithium-ion battery varies according to the type of hybrid engine:

- **The New Clio E-TECH Hybrid** has a 1.2 kWh battery (230 V) that allows significant reductions in fuel consumption and CO₂ emissions, for up to 80% of urban driving time in 100% electric mode
- **The New Captur E-TECH Plug-in Hybrid and New Mégane E-TECH Plug-in Hybrid** have a 9.8 kWh battery (400 V) that allows for up to 65 km in 100% electric mode in urban cycle (WLTP).

Responsiveness and energy optimisation

The combination of two electric motors, an innovative multi-mode gearbox and a combustion engine offers a wide variety of drive modes:

- **100% electric starting:** As the gearbox is clutch-free, the combustion engine is not used when starting the car; therefore, E-TECH hybrid vehicles are always set in motion by the primary electric motor. A rather stylish solution as it immediately provides maximum torque for a particularly responsive start.
- **Automatic adaptation to driving situations:** The E-TECH technology is **based on a series-parallel architecture** allowing it to combine the advantages of the different types of hybridisation possible (series, parallel and series-parallel). The engines can operate independently or in concert by directing their power to the wheels or to the battery. The powertrain manages its engines and their supply according to acceleration and power requirements, as well as battery regeneration opportunities. This management is carried out according to 15 operating combinations of the various engines and the gears engaged on the gearbox

In use, the **change from one mode to another is barely noticeable** and does not require any input from the driver. The E-TECH system automatically chooses the most appropriate mode for the situation in order to optimise emissions and fuel use, while guaranteeing responsive, enjoyable driving.

Energy regeneration and regenerative braking

E-TECH technology optimises energy use during both slowing and braking.

- **Battery regeneration during deceleration:** when the driver lifts their foot off the accelerator pedal and the gear stick is in 'Drive', the primary electric motor functions as a generator. It recovers kinetic energy produced by the deceleration and turns it into electrical energy that is sent back to the battery.
- **Mode "B":** to recover more energy, the gear stick can be put in 'Brake' (B) mode; this increases regeneration to the level allowed by the battery's storage capacity, up to an idling speed of about 7 kph.
- **Regenerative braking:** when the driver depresses the brake pedals, the braking process is triggered electrically, with additional mechanical braking from the brake pads if necessary. Here, too, the electric motor provides additional braking, recovering excess energy and returning it to the battery – while the battery's storage capacity allows.

All these features mean the Renault E-TECH Hybrid and E-TECH Plug-in Hybrid models are highly responsive for improved driving pleasure, they optimise energy consumption, and provide optimal battery recharge features that engage while the car is slowing and braking, which make for the best overall driving performance.

The first hybrid range with something for everyone, whatever their needs

As an addition to Renault's range of 100% electric engines, the hybrid engines in the Clio E-TECH Hybrid, New Captur E-TECH Plug-in Hybrid and New Mégane E-TECH Plug-in Hybrid serve a variety of uses. Their availability on versatile mid-range vehicles means the electric-car experience is now more accessible than ever before. Many other hybrid vehicles will follow.

The best Clio is now hybrid



Groupe Renault's vision of future mobility, which is autonomous, electric and connected, is embodied in the Clio. For example, it has one of the most modern and comprehensive driving assistance systems on the market, including the Highway and Traffic Jam Companion – a level 2 autonomy feature. Fitted with 9.3" screen and the newly released Renault EASY CONNECT connected offering, it also benefits from extensive multimedia extras.

Also, for the first time, the Clio range includes a full hybrid E-TECH engine. As a complement to the traditional combustion versions, and thanks to its extended electric range and split-second responsiveness when starting and accelerating, it offers a unique experience and a driving pleasure far beyond anything offered by other hybrid city cars on the market.

Combine efficiency with driving pleasure

The hybrid engine on the 140hp Clio E-TECH Hybrid offers maximum efficiency and unparalleled dynamic responsiveness on the road, accelerating from 80 to 120 kph in just 6.9 seconds.

Regenerative braking, combined with the high charging capacity of the 1.2 kWh (230 V) batteries and the efficiency of the E-TECH system, helps to optimise energy. In fact, **80% of the time spent on city roads is in all-electric mode, for a consumption saving of up to 40% compared with an internal combustion engine** in urban cycle, with no change in driving habits. In all-electric mode, the Clio E-TECH Hybrid can travel at up to 70-75 kph.



Together, the hybrid devices represent an additional weight of no more than about 10 kilos compared to a dCi 115 engine. In combined cycle, the Clio E-TECH **consumes 4.3 litres/100 km and emits 96 grams of CO₂/km (WLTP results)**. The batteries do not reduce the boot space (300 litres), the rear bench seat still folds down and there is still room for the spare wheel. By combining comfort and performance, it can offer dynamic features worthy of the highest segment, whilst retaining the versatility that it has shown over the last 30 years.

Behind the wheel of the Clio E-TECH



The Clio E-TECH Hybrid offers a hitherto unheard-of driving experience, based on the intelligence of the system and on optimised energy management rules. The combination selected on the traction chain responds to the driver's detected intention (power request) and to the permanent calculation of optimal output. This benefits both performance and consumption.

The driver has no need to bother about any parameters, the E-TECH technology sets them automatically, and imperceptibly. This ensures a remarkably agreeable experience and a more relaxing drive, without sacrificing the pleasure, thanks to the combination of the high performance (140hp) system, with a significant electric contribution, and a versatile, responsive chassis.

The MULTI-SENSE settings allow the driver to choose a driving mode to suit their mood or the current road profile.

The My Sense Mode is best for daily use. It offers the best compromises for a drive that blends reliable road-holding and a real sense of dynamism upon acceleration. This is due to the continuing “electric effect” (electric starting always, instantly available torque, etc.) that is easy to maintain and repeat, particularly in urban use but at higher speeds too.

Eco Mode uses a less dynamic, more measured mapping of the accelerator pedal, and on the adapted gear change rules.

Sport Mode, on the other hand, takes advantage of the system’s full potential for response times and performance. The feeling of fun that it offers is unrivalled on the small hybrid market.

Real-time indications of the behaviour adopted are given on the instrument panel and in the multimedia system, by the animated flow diagram showing the direction of circulation and the nature of the energy that is supplying the traction (electrical, mechanical, combined). The power meter on the instrument panel shows the level of power requested by the pedal load as well as the regenerative phases (foot lifted off the accelerator, braking). Lastly, the battery charge meter on the left of the instrument panel indicates the quantity of available electrical energy in real time, plus the consumption trend associated with the power demand and/or the road profile. The combination of these three visual indicators guarantees a good understanding of the driving.

Unique features for the Clio E-TECH Hybrid

The exterior has a recognisable rear bumper and E-TECH Hybrid badges located on the B-pillar and the boot lid. A ‘Hybrid Blue’ pack is also available to customise both the exterior and the interior.



Inside the car, the ‘Smart Cockpit’ features a 7” TFT instrument cluster and the new Renault EASY LINK infotainment screen in either 7” (horizontal) or 9.3” (vertical) format, the largest display area in the category. The new digital dashboard features a range of images and animations specific to hybrid; for example, they indicate battery levels while charging or show when the electric motor is in use.



The unique gear stick comes with an 'E-Tech' badge. Lastly, the EV button used to switch to electric mode, provided the battery has sufficient charge, is located below the multimedia screen.

The New Captur, electric on demand

A best-seller in its segment, both in France and Europe, the Captur is a front-runner for the Renault range. Sold across all continents, the New Captur builds on its previous success with a wholly new design and a new technological edge.



The E-TECH Plug-in Hybrid system will eventually be available from the intermediate finish level of the range. By thus employing its expertise in electric mobility on a popular, iconic model, Renault is making rechargeable hybrid technology widely available to offer a unique driving experience accessible to all.

Maximum versatility

The 160hp E-TECH Plug-in Hybrid engine and its high-capacity battery (9.8 kWh and 400V), weighing just 105 kg, mean that the New Captur can run **at 100% electric for 50 kilometres** with a top speed of **135 kph in mixed use (WLTP) and 65 kilometres in urban use (WLTP City)**. The New Captur is of unprecedented versatility: without compromises, it can run without using any fuel throughout the week for regular trips, then travel further afield on weekends or long holidays without having to worry about battery life. In order to maximise the range in electric mode, the vehicle is connected to a socket to recharge the battery (3 to 5 hours, depending on the socket, including domestic sockets). When the battery is flat, the New Captur E-TECH Plug-in Hybrid works like a full hybrid E-TECH Hybrid, with all the advantages of this system, such as all-electric starting and fuel economy.



The New Captur E-TECH Plug-in Hybrid is fitted with a new MULTI-SENSE mode: 'Pure' mode. It is available on the screen settings or with a dedicated button. This mode forces the transition to electric driving mode (provided the battery has enough charge).

In **MULTI-SENSE 'Sport' mode**, if the battery has enough energy, by fully depressing the accelerator pedal, **the three engines can work together thanks to the series-parallel architecture**. The vehicle can then tap into the powertrain's full potential; especially useful when overtaking, for example.



Another feature called 'E-Save', also available in MULTI-SENSE, limits the use of the electric motor and draws power from the combustion engine, to ensure a reserve of battery power (at least 40%) if the driver needs to switch to electric mode to drive in a city centre, for example.

In mixed cycle, the New Captur E-TECH Plug-In consumes 1.4 L/100 km and emits 32 grams of CO₂/km (WLTP figures).

Behind the wheel of the New Captur E-TECH Plug-in Hybrid



The unparalleled driving experience offered by the New Captur E-TECH Plug-in Hybrid lies first of all on the priority given to the use of electric traction. Every start is all-electric, so when the driver gets behind the wheel, there is the same feel and the same driving pleasure as in an electric vehicle like the ZOE: torque that is immediately available and instantly responsive acceleration. This dynamic behaviour not only makes itself felt in urban and suburban driving (where stops and starts are frequent), it is also evident on fast roads, thanks to the electric boost available during hard acceleration.

Whilst this adaptation of the power sources to the demand occurs automatically, transparently too via the graphics on the instrument panel and the Renault EASY LINK multimedia screen, the driver can also put their very own stamp on the way the traditional combustion and electric power is managed by using the MULTI-SENSE settings. In particular, Pure mode is provided to force electric driving (on arrival in a town centre, for example) and Sport mode takes advantage of the full combined power of the different sources when overtaking, for example.

Inside the car, comfort is improved by the silence of the electric motors: there is no noise from under the bonnet when they are operating without the combustion engine, and there is a noticeable reduction in the noise level when they complete the combustion engine as they allow the latter to run at lower speeds.

Moreover, a special effort has gone into striking a balance between the dynamic behaviour on the road and the comfort of the occupants. To compensate for the extra weight of the batteries, even though their location beneath the rear bench seat has made little change to the weight distribution, the rear axle is now a multi-arm system, rather than a semi-rigid shaft, and the suspension settings have been really fine-tuned by the engineers. The new Captur E-TECH Plug-in Hybrid provides an excellent level of comfort for all its occupants, while pushing the driving dynamics slider high. Versatile in its uses, it is also versatile on the road, as at ease in the city, where

smoothness must prevail, as well as on all types of roads for which a certain dynamism is required to make driving enjoyable. Agile, it controls body movements even on the most severe roads.

All in all, the New Captur E-TECH Plug-in Hybrid retains the recognised road qualities of its thermal versions, while its modularity (16 cm sliding bench seat) is not impacted and its load volume has been maintained at 379 litres.

Unique features for the New Captur E-TECH Plug-in Hybrid

The New Captur E-TECH Plug-in Hybrid draws on stylistic details that are specific to the hybrid range. 'E-TECH Plug-in Hybrid' badges are affixed to the boot lid and B-pillar. The petrol tank is on the left-hand side of the vehicle. The charging socket is located on the right and has a light that gives colour-coded information as to the state of the charging process: blue (charging), green (charged), orange (waiting), red (no charge).



Inside, the seating remains unchanged. The rear bench seat can still slide 16cm and the seatbacks still fold down to leave a flat floor. A 40 litres space under the hinged false floor allows the storage of the charging cables without encroaching on the boot volume.



Unique E-TECH markers are also present on the 'Smart Cockpit', including an E-TECH badge on the gear stick. The Stop & Start button has been replaced by an EV button to switch directly to 'PURE' mode (all-electric) while driving. The electric gear stick 'e-shifter' (no mechanical cables) comes with a 'Brake' function to get the most out of regenerative braking.

The New Captur E-TECH Plug-in Hybrid now features the largest screens in its category: a 10.2" digital dashboard and a 9.3" Renault EASY LINK multimedia display. The two screens make it easy to manage the active driving mode. The instrument cluster can be used to display battery life, recharge time, energy flows, energy recovery and current charge level of the traction battery.



All of this information is also available via the multimedia screen.

Lastly, the MY Renault app has functions specific to the E-TECH Plug-in Hybrid system. For example, you can use it to display the status of the battery or schedule recharging remotely

The limited launch editions of the Clio E-TECH HYBRID EDITION and New Captur E-TECH HYBRID EDITION



Available to order (depending on the market), the Clio E-TECH HYBRID EDITION and the New Captur E-TECH HYBRID EDITION are offered in several bodywork colours: Glacier White, Quartz White, Highland Grey, Titanium Grey and Diamond Black for the Clio; two-tone Highland Grey/Diamond Black, Cassiopeia Grey/Diamond Black, Diamond Black/Highland Grey and Pearl White/Diamond Black for the New Captur.



The New Captur E-TECH EDITION

These models are based on the Intens finish level and are distinguished by dynamic markings enhanced by a hint of copper. Located on the front bumper air intakes, the wheel rims and wing trims, they reinforce the expressive character of the vehicles. On the driver's side, a short descriptive text located below the rear-view mirror adds a technical touch to these limited editions. The lower door protectors on the Clio E-TECH HYBRID EDITION boast the same feature, as do the rear quarter panels on the New Captur E-TECH HYBRID EDITION.



Clio E-TECH EDITION

Inside, the EDITION versions of the Clio E-TECH Hybrid and New Captur E-TECH Plug-in Hybrid impress with the technical feel of the interior, which plays on the contrasts between the light grey door and dashboard inserts and the black fittings and headliner. The whole is enhanced by blue hybrid lines on the air vents. The black and grey upholstery is finished with blue over stitching. The equipment is complemented by backlit E-TECH door sills and specific floor mats.

The New Mégane is now a plug-in hybrid with E-TECH technology

Since the first Renault Mégane was introduced in 1995, seven million cars over four different generations have been sold worldwide. More than just a model, Mégane has become an entire line. Now it is a vehicle with many facets, as the New Mégane E-TECH Plug-in Hybrid demonstrates. This offers maximum versatility and the chance to discover a new electric driving experience while restricting CO₂ emissions and fuel consumption, even on long journeys.



Core-market plug-in hybrid technology

Renault, the expert in electric mobility, brings its expertise to the New Mégane with the 160hp E-TECH Plug-in Hybrid engine, a unique energy-recovery technology that offers a unique driving experience.

This core-market offering aims to address customer expectations. With various trim levels starting at the intermediate level and going up to the R.S. Line version, the E-TECH Plug-in Hybrid engine will be available at launch on the New Mégane Estate and later on the saloon version.

Versatility and fuel economy

The E-TECH Plug-in Hybrid engine with its 9.8 kWh (400 V) battery, weighing a mere 105 kg, means that the New Mégane can run in full-electric mode for 50 km at up to 135 kph in mixed cycle (WLTP) and for 65 km in urban cycle (WLTP City).

In mixed cycle, the New Mégane E-TECH Plug-in Hybrid consumes 1.3 L/100 km and emits only 28 grams of CO₂/km (WLTP results).

The New Mégane E-TECH Plug-in Hybrid is versatile. It can run without using fuel on regular trips, then take you on longer weekend or holiday journeys. Regardless of the state of charge of the battery, the New Mégane E-TECH Plug-in Hybrid engine benefits from the key advantages of the E-TECH hybrid system – all starts in electric mode and lower consumption.



Custom settings

The New Mégane E-TECH Plug-in Hybrid is equipped with a 9.3" Renault EASY LINK multimedia display and a 10.2" digital dashboard. It also features specific MULTI-SENSE settings with three driving modes:

- Pure: available in the on-screen settings or by pushing a special button on the dashboard, it switches to full-electric mode provided there is enough power
- My Sense: optimises the hybrid mode for lower running costs. Its "E-Save" feature reserves battery power (at least 40%) so that the driver can switch to full-electric mode when required (to drive in a city centre, for example)
- Sport: allows the driver to take advantage of maximum performance by combining the power of the three engines.

Lastly, although part of the boot is used for cable storage, the New Mégane E-TECH Plug-in retains all its modularity features, such as the EASY BREAK fold-flat rear bench seat and the tipping forward front passenger seatback. The Estate version has a payload volume of 447 litres.

Behind the wheel of the New Mégane E-TECH Plug-in Hybrid

The unparalleled driving experience offered by the New Mégane E-TECH Plug-in Hybrid lies first of all on the priority given to the use of electric traction. Every start is all-electric, so when the driver gets behind the wheel, there is the same feel and the same driving pleasure as in an electric vehicle like the ZOE: torque that is immediately available and instantly responsive acceleration. This dynamic behaviour not only makes itself felt in urban and suburban driving (where stops and starts are frequent), it is also evident on fast roads, thanks to the electric boost available during hard acceleration.



Whilst this adaptation of the power sources to the demand occurs automatically, transparently too via the graphics on the instrument panel and the Renault EASY LINK multimedia screen, the driver can also put their very own stamp on the way the traditional combustion and electric power is managed by using the MULTI-SENSE settings. In particular, Pure mode is provided to force electric driving (on arrival in a town centre, for example) and Sport mode takes advantage of the full combined power of the different sources when overtaking, for example.

Inside the car, comfort is improved by the silence of the electric motors: there is no noise from under the bonnet when they are operating without the combustion engine, and there is a noticeable reduction in the noise level when they complete the combustion engine as they allow the latter to run at lower speeds.

Moreover, a special effort has gone into striking a balance between the dynamic behaviour on the road and the comfort of the occupants. To compensate for the extra weight of the batteries, even though their location beneath the rear bench seat has made little change to the weight distribution, the rear axle is now a multi-arm system, rather than a semi-rigid shaft, and the suspension settings have been really fine-tuned by the engineers. Lastly, the E-TECH Plug-in Hybrid version of the Mégane retains the recognised road-handling qualities of the combustion versions, while its cargo boot volume is not significantly impacted (447 litres).

Unique features for the New Mégane E-TECH Plug-in Hybrid

The New Mégane E-TECH Plug-in Hybrid boasts styling details that are specific to this hybrid version. The charging flap is located on the right, opposite the fuel flap on the left-hand side.



E-Tech Plug-in Hybrid badges are fitted to the boot lid and the B-pillar, and the wheel nuts are circled in blue.



Inside the vehicle, the gear lever has an E-TECH mark.



The digital dashboard has a trim and MULTI-SENSE settings that are specific to this version.



Lastly, the EV button to switch to electric driving (provided the battery has enough charge) is located below the multimedia screen.

TECHNICAL SHEETS	E-TECH HYBRID AND PLUG-IN HYBRID RANGE		
Modèle	Clio E-TECH Hybrid	New Captur E-TECH Plug-in Hybrid	New Mégane E-TECH Plug-in Hybrid
ENGINES			
Fuel type	Petrol + self-rechargeable electric	Petrol + Plug-in electric	
Emissions standard	Euro6 D Full		
Approval protocol	WLTP		
After-treatment pollution clean-up system	3-way catalyst + GPF		
Engine type	4 cylinders, 16 valves + E-MOTOR + HSG		
Engine capacity (cc)	1598		
Bore x stroke (mm)	78 x 83,6		
Injection type	Multipoint indirect		
Combined power kW (PS)	103 (140)	116 (158)	
Maximum power kW (PS) at rpm)	ICE = 67 (91) at 5600 E-MOTOR = 36 HSG = 15	ICE = 67 (91) at 5600 E-MOTOR = 49 HSG = 25	
Maximum torque (Nm) at rpm	ICE = 144 at 3200 E-MOTOR = 205 HSG = 50		
Engine speed at 90% of max. torque (rpm)	2400		
Stop & Start and Energy recovery	Yes + B Mode		
Overhaul / Oil change interval	2 years / 30 000 km		
Distribution	Chain		
GEARBOX			
Type	E-TECH multi-mode automatic transmission with 15 combinations		
BATTERY			
Type	Lithium-ion		
Voltage (V)	230	400	
Capacity (kWh)	1,2	9,8	
TYRES AND BOOT			
Standard tire size	185/65 R15 195/55 R16 205/45 R17	215/60 R17 215/55 R18	205/55/R16 205/50/R17 225/40R18
Inflation kit / spare wheel	Yes / no		
Boot volume (VDA dm ³ / scanned litres)	254 /300	379 / 557 <i>(fully advanced rear bench)</i>	389 / 447
BRAKES			
Diameter / thickness of vented front discs (mm)	280 / 24	296 / 26	296 / 26
Diameter / thickness of solid rear discs (mm)	9' drum brakes	290 / 13	290 / 13
PERFORMANCE			
Top speed (km/h)	180	173	183
0 - 100 km/h (s)	9,9	10,1	9,8
1 000 m standing start (s)	31	31,6	31

Resumption 80-120 km/h	6,9	7,5	6,6
FUEL ECONOMY AND EMISSIONS (WLTP)			
CO ₂ (g/km)	96	32	28
Combined cycle (l/100km)	4,3	1,4	1,3
Fuel tank capacity (L)		39	
Electric range for mixed/urban use (km)	n/a	50 / 65	
STEERING			
Type	Electric power steering		
Turning circle, curb to curb (m)	10,5	11,1	11,3
Steering wheel turns, lock to lock	2,7	2,63	2,9
Front axle	Pseudo McPherson		
Rear axle	Semi-rigid axle	Multi-link	
WEIGHT			
Kerb weight (kg)	1238	1564	1603
Gross vehicle weight (kg)	1758	2060	2131
Gross train weight (kg)	2658	2810	2881
Max. braked trailer weight (kg)	900	750	750
Max. unbraked trailer weight (kg)	655	650	750