10 November 2025

Introducing the all-new Toyota Hilux BEV

- The legendary Hilux offered for the first time with a bespoke battery electric powertrain
- A key model in the all-new ninth generation Hilux range, fully endowed with Hilux's famous Quality, Durability and Reliability
- New model demonstrates Toyota's multipath philosophy, giving customers powertrain options to suit their needs and local driving conditions
- New lithium-ion battery unit installed within the vehicle frame, robustly protected for off-road driving conditions
- First application of the Toyota Multi-Terrain System in a BEV adjusting vehicle performance to suit a wide range of off-road conditions

In a history of remarkable achievements, the Toyota Hilux is set to post another milestone with the introduction of its first battery electric model.

The Hilux BEV is an integral part of an all-new ninth generation of the world-renowned pick-up. It gives customers the option of full electric power combined with the exceptional Quality, Durability and Reliability that are at the heart of Hilux's enduring success.

Moreover, accommodating the new powertrain has not been at the cost of Hilux's ability to operate in the most challenging environments, nor the space available in the cabin or load bay. Its off-road performance inherits the traditions of Hilux, affirming its role as a reliable partner.

Notably, this is the first time BEV technology has been used in a body-on-frame vehicle, a construction type that has been key to Hilux's built-in strength from the start. The battery is contained within the robust frame and is well-protected against damage or water ingress, so off-road driving can be tackled with confidence.

Toyota's extension of the Hilux range to include the BEV demonstrates the company's commitment to multi-path technology innovation, ensuring customers can access a range of powertrain solutions that meet their requirements while also supporting CO_2 reduction towards ultimate carbon neutrality. The Hilux BEV will be featured alongside the Hilux 2.8D 48V – the volume seller in Europe – and diesel and petrol ICE models for eastern European

markets. In the near future, a hydrogen fuel cell model will add another electrified option to the range, with availability planned for 2028.

A Toyota multipath model

The all-new Hilux fully embraces the Toyota multi-path philosophy giving customers multiple powertrain options to suit their mobility requirements, local infrastructure and access to energy supplies. The Hilux BEV brings all-electric power to Hilux for the first time and creates a full range of Toyota Professional EV light commercial models, alongside the Proace, Proace Max and Proace City.

Extending customer choice

The introduction of the BEV ensures Toyota's new generation Hilux range can extend its market reach with a model that combines electric power – with zero harmful tailpipe emissions – with practicality and capabilities appropriate to its role as a master of all terrains.

It will provide a valuable and viable solution for businesses seeking to reduce their carbon footprint or needing professional transport that can operate across urban low and zero emission zones.

The BEV will also deliver ownership cost savings, with lower parts maintenance and replacement requirements. Over several years, the benefits will be significant, particularly for business operating vehicle fleets.

New Hilux "Tough and Agile" design

The Hilux BEV adopts the same new exterior and interior design as the other models in the all-new ninth generation Hilux range, with the addition of some features specific to its electric powertrain. In common with all other new Hilux, it will be available exclusively in Double Cab format worldwide, in line with current customer preference.

Overall, the new Hilux – the BEV included – closely matches the dimensions and packaging of the current generation: current generation: overall length 5,320mm, width 1,855mm, height 1,865mm and wheelbase 3,085mm.

The design concept is “Tough and Agile”, shifting the dial in the market segment to take a new direction for high-capability pick-ups and to generate appeal to a broad range of customers, from businesses and fleets to private urban and leisure-focused users.

The new look adds a stronger emotional element and “premium modern” feel that generates a touch of urban sophistication with muscular surfacing and geometric wheel arches, while the overall ruggedness of the design inspires a spirit of adventure. Underpinning the design is Hilux’s essential toughness and strength.

The arrangement of the vehicle’s frontal architecture generates a visibly strong stance, generated by new proportions with a higher horizontal axis and an upper grille bar that links the slimmer headlight units and a classic TOYOTA logo.

On the BEV, the presence of the electric powertrain is reflected in an aero frontal treatment that dispenses with the front grille and the fitment of dedicated-design 17-inch alloy wheels.

BEV powertrain with permanent all-wheel drive

The powertrain comprises compact and lightweight front and rear eAxles with integrated inverter and transaxle. The units are engineered for optimum efficiency, with measures to reduce internal losses and energy lost as heat.

The inverter uses silicon carbide (SiC) semiconductors which have the capacity to handle high voltages and are more efficient than the traditional silicon type. The front eAxle produces 205Nm of torque and the rear unit 268Nm ensuring excellent traction and control, particularly in demanding off-road conditions.

Battery

The battery pack is new, specifically designed for installation within the Hilux’s frame. It is a 59.2kWh water-cooled lithium-ion unit comprising 80 cells, arranged in five 16-cell modules.

Temperature is controlled using a high-resistance, long-life coolant (LLC) which helps protect against corrosion and is resistant to conductivity – an important characteristic in high-voltage systems.

The battery's location helps secure a lower centre of gravity, which in turn supports good stability and handling.

The installation has avoided any intrusion in the Double Cab's interior and load space, while the frame design prevents the risk of the battery being damaged by twisting forces when travelling over uneven ground. Both CAE simulations and physical testing were used to optimise the battery location and ensuring a perfect fit within the frame.

Likewise, the battery is protected by being located within the vehicle's structure and the fitment of a robust undercover. The frame's side rails have also been reinforced with aluminium impact-absorbing sections to provide extra protection in the event of a collision. These are important measures, given the need for Hilux to be able to tackle the toughest driving conditions.

Charging

The Hilux BEV can be charged using a DC fast-charging system of more than 150 kW, using a CCS2 connection. This should enable charging from 10 to 80 per cent in around 30 minutes, subject to local operating conditions, such as the ambient temperature*.

AC charging can also be used at speeds up to 10kW, using a domestic or public wallbox with Type2 connection. A charge from 10 to 100 per cent should take about six-and-half hours*.

Owners can programme smart scheduling for their Hilux, setting charging start times to suit their preference and take advantage of lower-cost electricity opportunities at off-peak times. They can also set a charge limit of between more than 50 and 90 per cent.

Prior to any homologated data being obtained, Toyota's testing indicates that with a full charge, the Hilux BEV will have a driving range of approximately 150 miles. The actual distance may be impacted by local climate conditions, operation of vehicle functions such as the air conditioning, and the weight of any load being carried or towed.

Quality, Durability and Reliability guaranteed

Quality, Durability and Reliability have been fundamental to Hilux's sustained success and global reputation across successive model generations. In the development of the new Hilux BEV, maintaining these essential characteristics was a prime concern: this had to be an authentic Hilux, true to the model's best traditions

The BEV is subjected to the same rigorous quality testing as other models in the new Hilux range, together with additional tests specific to its electric powertrain. These include deep-water driving to confirm of the pick-up's 700mm wading depth; high-speed water intrusion checks; off-road durability trails; and total immersion of the battery. To help safeguard against any water entering the electric motor, the eAxle breather is set high on the unit.

As a result, the essential QDR has not been sacrificed or compromised, ensuring that this is a vehicle that can be relied on – like any Hilux – to serve as a trusted partner.

Performance and handling

The Hilux BEV benefits from measures to improve dynamic performance and handling that are shared across the all-new, ninth generation model range.

These include the adoption of an electric power steering system – a first in Hilux. Compared to a hydraulic system, this gives more direct response to the driver's inputs, easier manoeuvring in both on and off-road driving and less risk of kick-back when travelling over rough surfaces. EPS is also more energy-efficient, only using electric power when turning assistance is required and not when the vehicle is idling or moving in a straight line.

Ride comfort has been enhanced by increasing the body rigidity with an additional 30 spot weld points added to the vehicle's front and rear floor sections and the deployment of a strengthened rear anti-roll bar.

Tentative, pre-homologation data indicate approximate figures of 715kg for the payload. After extensive evaluation and customer research, we determined that this is the optimal balance between electric range, power, and usability. This figure allows us to deliver robust electric performance and practical range, while still meeting the real-world needs of Hilux users.

The Hilux BEV is engineered to tow up to 1,600kg. This ensures that the vehicle remains a true workhorse, capable of handling trailers, equipment, or leisure loads with confidence.

Off-road performance

From the project outset, it was a requirement that Hilux BEV's off-road performance capabilities should closely match those of the other models in the ninth generation series and be able to meet wide-ranging customer needs.

To do this, it was critical to maintain a rigid rear structure that can withstand challenging off-road conditions. Additional crossmembers have been added and others have been reprofiled and a new de Dion rigid leaf rear suspension system has been introduced. This allows the rear eAxle to be accommodated without risking damage or compromising the pick-up's ability to tackle very rough terrain.

The BEV's 29° approach and 24° departure angles, 500mm wheel articulation and 700mm wading depth are values equal to those of other new Hilux models. The ground clearance is also matched, at 207 mm. There is a small reduction (-4° to 20°) in the vehicle's break-over angle.

Flexible control of front and rear axle power distribution according to front/rear load or detection of wheel spin ensures good traction and driving stability, both on the road and when driving off-road.

The first Toyota BEV with advanced Multi-Terrain Select technology

This is the first Toyota battery electric vehicle to be equipped with Multi-Terrain Select (MTS), a five-mode electronic system that automatically adapts vehicle performance to suit different off-road driving scenarios.

In vehicles that feature an internal combustion engine, including the new Hilux Hybrid 48V, Toyota's MTS uses the transmission's low L4 range and drive force and braking control to help secure steady progress in challenging conditions. In the BEV, the system gives outstanding performance using precise control of drive torque and braking. This underwent extensive real-world testing on different off-road terrains to ensure a wide range of customer can use it with confidence in different environments.

In common with standard MTS, the driver can choose settings appropriate for different surfaces: -

- Rock, for trails and climbs with boulders and large stones
- Sand, for beaches, desert trails and loose sandy surfaces
- Mud, for wet and mushy tracks and fields
- Dirt for dirt roads and gravel tracks
- Mogul, for bumpy terrain – first time in a BEV

There is also an automatic mode which allows the system to adopt the most suitable setting, according to vehicle behaviour and driver inputs.

* The listed charging times are approximate and based on charging at stations with sufficiently high output. The time required to complete charging may vary depending on factors such as the remaining battery level, outside temperature, and whether it is normal or fast charging.

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