

TOYOTA PRIUS+

In 2012 the Toyota Prius advanced from being a single, global model to become a family of full hybrid vehicles. In Europe the first stage of this development was the introduction of Prius+, the first full hybrid seven-seat vehicle to be sold in the region. This was later joined by Prius Plug-in, a new version of the world's best-selling hybrid that delivers even greater fuel efficiency and low emissions thanks to a rechargeable lithium-ion battery.

These additions to the Toyota range, together with Yaris Hybrid, Auris Hybrid and third-generation Prius, demonstrate the fundamental adaptability of Toyota's Hybrid Synergy Drive to work in different size vehicles.

For 2015, Prius+ received its first major revisions, with improvements to the exterior styling, the introduction of advanced technologies for safer journeys and the addition of Toyota's latest multimedia and connectivity features. Customer choice was increased as well, with the addition of a third equipment grade, Excel Plus. In 2016 the package was further refined, with changes to the transmission to deliver quieter, more linear acceleration.

DESIGN

- Exterior retains the characteristic Prius triangle silhouette
- New frontal styling
- Aerodynamic design supports fuel economy, handling stability and quiet performance
- Interior accommodates seven, with ample luggage space
- Split/fold/slide functions for second row seats and split/fold third row

Prius+ was designed from the ground up, but it bears design hallmarks that show it to be an evolution of the original Prius.

As its name suggests, it offers significantly more space on board, while maintaining an overall compact size to ensure excellent aerodynamic performance. Overall it measures 105mm longer than a standard Prius, 15mm wider and 105mm higher. The wheelbase is 80mm longer than the Prius hatchback, which makes it possible to seat seven inside, in three rows of seats.

Exterior design

The car's characteristic triangle silhouette makes it easily recognisable as a member of the Prius family, and it presents a clean and strong front-end design styling that helps manage the flow of air over the vehicle. The full benefits of the lightweight high tensile steel and aluminium construction and the quiet Hybrid Synergy Drive powertrain are supported by an exterior designed for maximum aerodynamic efficiency. This helps improve fuel economy, handling stability and quiet performance.

Prius+ was given a more impactful appearance for 2015 with a new frontal treatment that adopts the latest Toyota styling cues.

The revised front-end features an upper grille and a more prominent Toyota badge that extends the forward line of the bonnet. There are LED headlights, too, which use a cylindrical projector for both high and low beam. Their slim profile and contrasting black and chrome plating give Prius+ a distinctive, sharp-eyed appearance.

The lower grille adopts the trapezoid shape that's a common feature of the latest Toyota models. With a gloss black metallic finish, it adds emphasis to the car's broad stance. The impression of width is reinforced by a re-working of the bumper corners, given extra emphasis in a flowing form that extends from the headlights to the air intakes and LED daytime running lights.

At the rear the top-hinged tailgate is flanked by a combination lamp design with "light guide" treatment and red inner lenses that give the car an individual lighting signature. Following the styling themes adopted at the front, there is a revised licence plate trim and bumper with an integrated diffuser.

In profile Prius+ retains the familiar Prius triangle silhouette, but develops the design with spindle shape created by the long, seamless flow of the bonnet, A-pillar and roofline, the clean sweep of the full-length side glazing, emphasised by blacked out centre and rear pillars, and a rising crease line in the lower bodywork which flows unbroken into the rear bumper.

The smooth convergence of airflow from the roof and sides of the vehicle is vital to Prius+ aerodynamic efficiency. The body itself tapers in shape, and the flow of air away from the vehicle is smoothed by a roof spoiler that has been optimised for length and angle, an air-

kick shape worked into the rear light units, and aero corners on the rear bumper. Spats fitted at the front of each wheel arch suppress airflow changes around the tyres, improving the car's straight line stability and steering.

Working together, these elements give Prius+ a drag coefficient of Cd 0.28.

The Hybrid Synergy Drive system is represented in a series of external features, including badging and blue detailing on the headlamps. Seven exterior colours are available: Pure White, Decuma Grey, Galaxy Black, Tyrol Silver, Phantom Blue, Sienna Bronze and White Pearl.

Sixteen-inch alloy wheels with aerodynamic wheelcaps are featured on the Icon model and 17-inch alloys are standard on the Excel and Excel Plus; all are fitted with tyres with low rolling resistance.

Interior design

The interior design features a horizontal dashboard that encompasses the centre console and instrumentation in a single flowing form. Combined with a concave door trim and a well-defined space between the centre console and instrument cluster that links the driver and front passenger, it creates a great sense of spaciousness.

The console flows into an instrument binnacle that is mounted centrally on top of the dashboard. The hybrid system indicator and speedometer are positioned within the binnacle, close to the steering wheel, so minimising driver eye movement from the road ahead. There is a dark silver metallic finish for the driver's switchgear and the air conditioning dial control and a chrome finish for the door handles and air vent trims in the centre console.

The 2015 revisions included the introduction of a 4.2-inch colour TFT information screen, controlled using switchgear on the steering wheel. As well as basic information such as clock, trip indicator, cruising range fuel consumption, the screen also displays the Hybrid System Indicator and Energy monitor – features common to all Toyota hybrids. It also provides an "Eco Judge" function, designed to help the driver maximise the powertrain's efficiency, giving a points score for their eco-driving style.

The screen will also mirror the settings for the air conditioning and audio settings, keeping them in the driver's line of sight when on the move.

The instruments and switchgear in the central section are clearly divided between those for driving and those for other functions. All the driving-related switchgear is positioned close to the steering wheel and set within a trim with a metal-like finish.

The cabin uses contrasting finishes and soft-touch materials to give an advanced look and feel. Hayama grey cloth is used on the Icon and Nagara black leather upholstery on the Excel and Excel Plus.

Three-tier, seven-seat packaging

Being longer overall than the Prius hatchback, Prius+ offers significantly more cabin space for passengers and their luggage.

The seven-seat format features three independent sliding/split-folding second row seats and a 50:50 split-folding third row. It's been possible to fit a third tier of seats by locating the hybrid system's spacing-saving lithium-ion battery pack in the centre console, between the front seats.

The couple distance is key to passenger comfort and in Prius+ the measurement between the front and second row seats is 965mm, while that between the first and third row is a class-leading 1,635mm. Knee room in the second and third rows has been improved by using a thin, curved seatback design for the front and second row seats.

Everyone on board has a good view out, thanks to each row of seats being set 45mm higher than the one in front. This has been achieved while maintaining good headroom throughout the vehicle.

The front seats have 260mm slide and 60mm height adjustment, can be fully reclined, and come with electric lumbar support adjustment as standard. The seat frame design means they give a better fit and lateral hold, too.

There are gains for second row passengers as well, with m more headroom and shoulder room compared to the hatchback. The three seats can be individually slid, reclined and folded; the outer seats have a sliding range of 180mm and the one in the middle can be moved through 165mm. This enables a staggered seating plan that can provide more shoulder room for adults. All three seats can be folded fully flat to maximise the loadspace. Each can be reclined by up to 35 degrees.

With all seats in place, Prius+ has 232 litres of cargo space up to the roof. With the third row stowed, this figure rises to 784 litres, and when all the rear seats are folded flat, a maximum 1,750 litres is available. Loading is made easier thanks to the 1,105 by 730mm tailgate.

The storage is flexible, too, with a 345mm-deep 60-litre storage tray beneath the luggage deck. There is room enough to take shopping bags, or a suitcase or baby buggy which can be stored vertically by flipping up the deck board.

There are also plenty of storage spaces around the cabin. Up front there is an 8.5-litre glovebox, 4.5-litre upper glovebox and an accessory space on the side of the driver's seat. The side-opening two-litre centre console box can hold up to eight CDs and can be accessed from both the front and second row seats. The unit includes a dedicated tray for storing a USB-connected phone or digital music player.

The front and rear door pockets are large enough to take A4 documents or plastic bottles, and there are five cupholders distributed between the three rows of seats.

POWERTRAIN

- First non-plug-in Toyota full hybrid to use a lithium-ion battery
- Compact, high-output lithium-ion battery located in the centre console
- Improved exhaust heat recirculation system and change of electric motor cooling from air to liquid
- Reduced final drive gear ratio enables acceleration to be matched with standard Prius

The principal elements in Prius+ Hybrid Synergy Drive system are a 1.8-litre VVT-i petrol engine, a powerful electric motor, a generator, a high-output lithium-ion battery, a power control unit and a power split device.

The engine and motor will work together or the electric motor will operate alone to maximise efficiency according to driving conditions and driver demands, giving the best balance of performance and fuel economy.

During deceleration and under braking, the electric motor works as a high-output generator to effect regenerative braking, recovering kinetic energy that would normally be lost as heat and storing it as electric power in the high-output battery.

The system drives through a seamless, electronic continuously variable transmission (E-

CVT), controlled using shift-by-wire technology and an electronic shift lever.

As in the standard Prius, Prius+ offers three on-demand drive modes to tailor performance of the hybrid powertrain to suit driver preferences. These include an all-electric EV mode for near-silent running with zero tailpipe emissions.

Lithium-ion battery

For Prius+, Toyota adopted lithium-ion technology for the first time in a non-plug-in hybrid, reaping the benefits of significant weight saving and more compact packaging. As the battery is much smaller than the nickel-metal hydride type used in the standard Prius, it has been possible to fit it within the centre console, between the front seats.

Its houses 56 cells, arranged vertically in a double-stacked structure. As well as being smaller in volume, it weighs just 34kg.

1.8-litre Atkinson cycle engine

The light and compact, four-cylinder, 1,798cc Atkinson cycle petrol engine develops a maximum 97bhp/73kW at 5,200rpm and 142Nm of torque at 4,000rpm. Adopting the Atkinson cycle, and introducing a cooled exhaust gas recirculation system, provides valuable gains in fuel efficiency and reduces emissions.

In contrast to a conventional Otto cycle engine, the intake valves on an Atkinson cycle engine close late, delaying compression. This creates a high expansion ratio for less compression, reducing intake and exhaust energy losses and converting combustion energy into engine power more effectively. As a result, the exhaust temperature is lower than in conventional engines. Cooled exhaust gas is reintroduced into the intake system, which further reduces the engine's operating temperatures.

Together these technologies minimise situations when the cooling effect of fuel enrichment is needed to protect the catalytic converter from overheating damage, thus improving fuel economy and cutting emissions.

Prius+ engine heat management system combines the improved exhaust heat recirculation system with an electric water pump to help improve fuel consumption and cabin comfort in cold weather. To reduce mechanical losses, an electric system is used in place of a conventional water pump and drive belt, which allows the coolant flow rate to be controlled more precisely.

The exhaust heat recirculation system directs exhaust gases via a valve in the exhaust assembly to heat the engine coolant at start-up. The system is 33 per cent lighter and 27 per cent more efficient than that used in the standard Prius engine, and it enables a greater amount of heat to pass from the exhaust to the coolant in the heat exchange system. This allows for more rapid delivery of effective cabin heating, while also improving the efficiency of the hybrid system and overall fuel economy.

E-CVT hybrid transaxle

The transaxle is at the heart of the Hybrid Synergy Drive system, comprising the electric motor, generator, power split device and double-motor reduction mechanism, all contained in a single light and highly compact transmission casing that is much the same size as a conventional gearbox.

Electric motor/generator

The high performance, permanent magnet, synchronous 60kW electric motor/generator works in tandem with the petrol engine to boost acceleration when required, or to power the driven wheels on its own when Prius+ is operating in EV mode.

To help achieve the highest efficiency, in spite of the increase in weight over the standard Prius, the motor's cooling system has been changed from air to liquid.

The motor generates maximum power from zero rpm and a peak 207Nm of torque. The 650V DC maximum drive voltage allows for a lower operating current and, hence, a reduction in heat, helping improve the efficiency of the Hybrid Synergy Drive system.

Power control unit

The power control unit is similar in size to a standard 12V battery. It consists of a voltage boost converter, an inverter and DC/DC converter.

The PCU boosts the DC voltage level from the hybrid battery and converts it to AC electricity to drive the electric motor. It is governed by a motor ECU in the system's power management ECU.

Non-hybrid vehicles use an alternator to charge the auxiliary battery, but because it cannot operate when the engine is switched off, an alternative is needed for hybrids. Hybrid Synergy Drive has a DC/DC converter, which reduces the high voltage of the 202V high-

output battery to 14V, to power the car's accessory systems and charge the auxiliary battery.

Performance

Prius+ Hybrid Synergy Drive powertrain combines the 97bhp/73kW output of the 1.8-litre petrol engine with the 60kW output of the electric motor to achieve a maximum system output of 134bhp/100kW. Prius+ can accelerate from 0-62mph in 11.3 seconds and attain a top speed of 103mph (166km/h).

The vehicle's excellent aerodynamics, low weight and full hybrid system together help deliver class-leading combined cycle fuel economy and emissions of 68.9mpg and 96g/km (Icon model).

Hybrid Synergy Drive in operation

Over the course of any journey, Toyota's hybrid synergy drive will operate in different modes to maximise Prius+ overall efficiency.

When the vehicle is at rest, the engine automatically stops to conserve fuel. In low efficiency driving conditions, such as at start-up and at low to mid-range engine speeds, the car will automatically run in EV mode, using just its electric motor and thus producing no tailpipe CO₂ and NO_x emissions.

As explained above, the electric motor operates as a high-output generator when the car is decelerating or braking, capturing kinetic energy that would normally be lost as heat, and storing it as electricity in the high-output battery.

The battery's power level is constantly managed via an engine-driven generator, which means there is no need for the system to be recharged from an external power source.

Three on-demand driving modes

In addition to Prius+ Normal drive, there are three further modes the driver can select from – EV, Eco and Power – to further increase driving efficiency, performance and fuel economy.

These modes are backed up by indicators that can help drivers who want to tailor their driving style to achieve better environmental performance.

When starting Prius+ in Normal mode, the hybrid system automatically operates in EV mode, using just electric motor power to give instant power and an especially smooth and

quiet ride. This function is a characteristic of full hybrid technology and is not available in mild hybrid systems.

In Normal mode the full hybrid system will still run on electric power alone when conditions permit, at speeds up to 31mph (50km/h); above this speed, the petrol engine comes smoothly into play.

EV mode can also be selected manually, allowing the driver to make greater throttle inputs without starting up the engine. However, the engine will come into play if the hybrid system determines that its power is needed at any time. In EV mode Prius+ can be driven in town traffic with minimal noise and no tailpipe emissions, but its operation and driving range are dictated by factors such as the level of battery charge, driver inputs and road conditions.

The full hybrid powertrain is optimised so that owners can maximise the opportunities when the Prius+ can run in zero-emissions EV mode. Toyota's analysis of data obtained from urban and extra-urban journeys shows that the full hybrid powertrain enables a high proportion of zero-emissions driving, averaging up to 61 per cent of journey time and 50 per cent of the total distance travelled.

Because using only light or medium throttle pressure keeps the petrol engine switched off, EV driving contributes to a significant reduction in Prius+ overall fuel consumption.

In Eco mode, throttle response to aggressive use of the accelerator pedal is reduced and the performance of the air conditioning system is adjusted to improve fuel economy. Depending on driving conditions, Eco mode can help drivers cut overall fuel consumption by around 10 per cent.

Conversely, Power mode increases response to throttle inputs by 25 per cent to boost power and improve acceleration.

The three on-demand drive modes are supported by an Eco Drive Monitor. Presented on the Toyota Touch display, this shows the flow of energy through the hybrid system at any time, helping the driver adapt their driving style to achieve the best efficiency and fuel economy.

DRIVING DYNAMICS

- Transmission revised for better driving experience
- Modified electric power steering

- New pitch and bounce control
- Comprehensive NVH measures

The 2016 Prius+ adopted strategic revisions to its continuously variable transmission that secure quieter and more linear acceleration, more closely linking the driver's use of the throttle to the increase in speed and the rise in the engine note.

Toyota's engineers have been able to maintain acceleration performance while reducing engine revs by around 1,000rpm, by using more electric power to support the performance of the 1.8-litre VVT-i Atkinson cycle petrol engine. The result is a more relaxed, smoother and quieter drive, reinforcing the hallmark quiet, responsive and intuitive drive quality of Toyota's full hybrid technology.

Prius+ bodyshell displays both high torsional rigidity, for a comfortable ride, and light weight, essential for maximising the potential of the full hybrid powertrain.

Using high tensile steel for elements such as the B-pillar and rocker reinforcement, hot press materials in the roof reinforcement and door impact beams, and aluminium for the bonnet and front bumper reinforcement, brings significant weight savings.

Special attention has been paid to torsional rigidity, with strategic positioning of reinforcements and bracing throughout the bodyshell.

The front suspension spring supports are coupled with a straight shaped cowl front, which improves the body's frontal rigidity. Lateral rigidity is improved by using a cross section that joins the left and right inner wheel housings, while at the rear a circular reinforcement has been incorporated in the cross section member around the tailgate aperture.

Reinforcing the front suspension by using a brace to couple the front spring support, cowl and A-pillar, helps improve driving stability.

Taken together, these measures have increased bodyshell rigidity by 15 per cent compared to the standard Prius, performance that allows softer spring settings to be used to give better ride quality without compromising handling stability.

Revised suspension

Prius+ uses the same MacPherson strut front and torsion beam rear suspension, tuned for agility and a more ride.

At the front, a high 6.5-degree caster angle is used and the layout of the anti-roll bar is optimised, for better stability and steering feel. The shock absorbers have a specially designed piston valve with expanding oil paths, which allows for reduced damping force at high piston speeds, reducing impact shock.

The upper support structure separates coil spring and shock absorber inputs into two paths, allowing the spring input to be transmitted to the body without going through the upper support. This allows the rubber section to be designed specifically to manage shock absorber inputs, making it more efficient and contributing to a better balance of handling and ride comfort.

A reduction in the radial dynamic spring rate has reduced road noise, and a 25 per cent increase in the vertical damping coefficient helps deliver a smoother ride.

At the rear the suspension benefits from the same shock absorber design as the front system. The mounting points for the shock absorbers and coil springs have been separated to give a wider loadspace, and the shock's upper mounting has been lower, again to help maximise luggage capacity. Angled carrier bushings allow for neutral handling, with a tendency for understeer that helps improve steering precision.

Improved electric power steering

Prius+ features speed-sensitive electric power tailored to compliment the vehicle's specific handling characteristics.

It incorporates a high rigidity intermediate shaft design, and the steering rack is attached directly to the front suspension member for the best possible rigidity and steering response.

The logic control and revised 18.1:1 steering gear ratio are specific to Prius+ to support the smooth and natural feel of the EPS system.

Pitch and bounce control

Prius+ marked the world-first use of a new pitch and bounce control system in a hybrid vehicle. By automatically adjusting electric motor torque in direct response to road surface conditions, the system can reduce the pitching motion of the body, improving ride and handling.

The system uses wheel speed sensor information to establish when the vehicle's nose is lifting or dipping. When the nose lifts, the Hybrid Synergy Drive system's ECU momentarily reduces motor torque to compensate; when it dips, torque is added to compensate in a similar fashion.

Although the adjustment of motor torque is measured in extremely small quantities, it has a noticeable effect on ride and handling: the ride is more comfortable, through the perception of a flatter ride, created by reduced body movement. Also steering feel around the centre line is improved through the tyres gaining better roadholding.

Improved NVH performance

As in the standard Prius, road and engine noise are rigorously suppressed through the use of high performance sound proofing materials throughout the engine compartment and cabin. For 2016, the provisions were increased to achieve even better insulation of the cabin from engine noise.

The dashboard's inner silencer is redesigned for improved acoustic separation from the engine bay, and layers of insulating material up to 23mm thick have been applied to the back of the instrument panel and the undercovers. Full thickness glazing and an acoustic windscreen further reduce the level of wind noise experienced at cruising speeds.

Reducing the spring rate of the upper front suspension mount rubber bushings and fitting new-design tyres have reduced road noise and made the cabin even quieter.

EQUIPMENT AND UK MARKET

- Addition of new Excel Plus grade alongside established Icon and Excel
- Multimedia upgrade with Toyota Touch 2 as standard, with touchscreen, Bluetooth, DAB and reversing camera
- Toyota Touch 2 with Go, including navigation, standard on Excel and Excel Plus models
- Auto-dimming rear-view mirror, LED headlights, new rear lamp clusters and tyre pressure warning system featured across the range
- Pre-Crash Safety system and Adaptive Cruise Control standard on Excel and Excel Plus; leather upholstery and rear DVD entertainment system included in Excel Plus specification

Advanced technologies for safer journeys and multimedia connectivity led the specification

improvements introduced for the 2015 Toyota Prius+. At the same time, new three-grade line-up was introduced to increase customer choice, with Excel Plus joining the established Icon and Excel models.

All versions come with LED headlamps, LED rear light clusters and a sharper front-end treatment. The entry level Icon grade features the latest Toyota Touch 2 multimedia system with touchscreen, Bluetooth, DAB digital radio and reversing camera, plus a tyre pressure warning system. The cabin gained a redesigned centre console, dark trim finish and improved seat fabrics. A colour TFT screen was added to the upper instrument panel.

On Excel and Excel Plus models, the Toyota Touch 2 with Go system adds navigation and connectivity functions, including access to live traffic information and, via Toyota's online portal, an expanded range of connected services, text-to-speech function and 3D city modelling with landmark graphics.

These versions of Prius+ further benefit from technology features that improve safety and contribute to smoother and easier driving. Both feature Toyota's Pre-Crash Safety system, which is designed to help the driver avoid a collision, or to reduce the consequences should an impact happen. PCS uses a millimetre-wave radar to scan the road ahead and determine the risk of an impact. When it senses a high collision risk, it warns the driver and prepares the brakes for optimum operation; if an impact is deemed unavoidable, it tightens the front seatbelts and activates pre-crash braking.

This system is provided together with Adaptive Cruise Control, which uses the same radar to monitor the distance from the vehicle ahead when driving in traffic, slowing the Prius+ down safely when required and returning to the pre-set cruising speed when the road is clear.

Parking is easier than ever with the provision of the latest generation of Toyota's Intelligent Parking Assist. This will scan a viable parking space and provide automatic steering to guide the Prius+ into place (with the driver maintaining control of the brakes and throttle). The system can also help you exit from a tight parking space.

Additional features on the Excel Plus model include full leather seat upholstery and, reinforcing Prius+ status as an excellent family vehicle, a twin DVD rear seat entertainment package.

Key equipment features

ICON	EXCEL adds	EXCEL PLUS adds
16in alloy wheels	17in alloy wheels	Full leather seat upholstery

Dusk-sensing headlights	Pre-Crash Safety system	DVD rear seat entertainment package (x2 independent monitors)
Rain-sensing wipers	Adaptive Cruise Control	
Toyota Touch 2 with DAB, Bluetooth and 6 speakers	Intelligent Park Assist	
Reversing camera	Toyota Touch 2 with Go	
LED headlights		
Colour TFT screen		
Smart Entry and Start		
Front fog lamps		
Rear privacy glass		
Auto-dimming rear-view mirror		
Heated front seats		
Automatic air conditioning		
Cruise Control		
Tyre pressure warning system		

Air conditioning

True to the standard set with Prius, the air conditioning system in Prius+ is compact, lightweight and efficient to minimise energy consumption and support fuel efficiency.

Thanks to its electric inverter, the system can operate independently of the engine. And when the driver selects Eco mode, a control system adjusts performance so there is less impact on the vehicle's fuel consumption.

The system features single-dial control for easy adjustment of temperature, mode and fan speed.

Head-up display with Touch Tracer control

All Prius+ models come with a head-up display, which projects key vehicle information on to the base of the windscreen, so that it can be seen by the driver with least distraction from the road ahead. The data presented include vehicle speed and Touch Tracer displays.

The Touch Tracer switches are touch-sensitive controls on the steering wheel which the driver can use to operate the audio system, air conditioning, trip meter and drive monitor without having look to down or take hands off the wheel.

A touch of the switch lights up a control function map on the head-up display. Items are

highlighted in line with movement of the driver’s fingertip to the desired function; this can then be selected simply by pressing the Touch Tracer control. When, for example, the air conditioning setting has been adjusted, the system will briefly display the new setting as an “answer back” on the display.

Optional equipment

Owners of Icon models can add leather upholstery, rear-seat twin DVD entertainment package and the Toyota Touch2 with Go system as equipment options.

Ownership costs

Thanks to the exceptional efficiency of its Hybrid Synergy Drive powertrain, its light weight and wind-cheating aerodynamics, Prius+ in Icon trim produces 96g/km of CO₂, making it the only seven-seat model on the UK market to come in below 100g/km; output from the Excel and Excel Plus (on larger, 17-inch wheels) is only marginally higher at 101g/km.

Fuel economy adds to Prius+ attractive total ownership cost: official figures are 68.9mpg for the Icon on 16-inch wheels, and 64.2mpg for the Excel with 17-inch rims.

TIMELINE AND UK SALES

YEAR	MONTH	EVENT
1997	December	First generation Prius launched in Japan.
2000	October	Prius launched in the UK.
2004	January	Second generation Prius launched in the UK.
2009	January	The third generation Prius makes its debut at the Detroit motor show.
	August	Third-generation Prius UK sales launched.
	September	Prius Plug-in Hybrid concept car unveiled at Frankfurt motor show.
	December	Toyota announces a global trial leasing programme for Prius Plug-in.
2010	June	Toyota and EDF launch a trial of Prius Plug-in London to gather performance and user intelligence prior a production model being launched.
2011	March	Toyota reveals Prius Plug-in at the Geneva motor show and

		signals it will quickly advance into production.
	September	Production version of Prius+ appears at the Frankfurt motor show.
2012	July	Prius Plug-in UK sales begin .
2013	June	Global Prius sales pass three million units.
2014	July	A Prius Plug-in sets the first fuel economy record lap at the Nürburgring.
2015	January	Prius+ gains Excel Plus grade , revised styling and new equipment features
2016	May	Prius+ transmission revised to improve driving experience. 2016-specification Toyota Touch 2 system is adopted.

Prius Plug-In UK sales in 2016: 1,184

Cumulative UK sales since launch (2012): 5,081

TOYOTA PRIUS+ TECHNICAL SPECIFICATIONS

ENGINE	
Numbers of cylinders and arrangement	4 cylinders, in-line
Valve mechanism	16-valve double overhead cam (DOHC) with VVT-i
Bore x stroke (mm)	80.5 x 88.3
Displacement (cc)	1,798
Compression ratio	13.0:1
Fuel system	Electronic fuel injection
Max. output (bhp/kW @ rpm)	98/73 @ 5,200
Max. torque (Nm @ rpm)	142 @ 4,000
MOTOR/GENERATOR	
Motor type	Permanent magnet, synchronous motor
Max. voltage (DC V)	650
Max. output (bhp/kW)	81/60
Max. torque (Nm)	207
HIGH-VOLTAGE BATTERY	
Battery type	Lithium-ion
Nominal voltage (DC V)	201.6
Number of battery Cells	56
Battery capacity (Ah/kWh)	5.0/1.0
Max. output (bhp/kW)	36/27
HYBRID SYNERGY DRIVE	
System max. output (bhp/kW)	134/100
TRANSMISSION	
Transmission type	Electric continuously variable transmission (E-CVT)
Gear ratio	Forward 2.683

	Reverse	2.683	
Differential gear ratio		3.703	
PERFORMANCE			
Max. speed (mph)		103	
0-62mph (sec)		11.3	
FUEL CONSUMPTION			
		Icon (16in wheel)	Excel /Excel Plus (17in wheel)
Combined (mpg)		68.9	64.2
Urban (mpg)		74.3	65.7
Extra urban (mpg)		67.3	65.7
Fuel tank capacity (l)		45	
EMISSIONS & INSURANCE			
		Icon (16in wheel)	Excel/Excel Plus (17in wheel)
Emissions level		Euro 6	
CO ₂	Combined (g/km)	96	101
	Urban (g/km)	89	98
	Extra urban (g/km)	95	100
Carbon monoxide, CO (mg / km)		100.7	
Total hydrocarbons, THC (mg / km)		13.8	
Non-methane hydrocarbons, NMHC (mg/km)		12	
Nitrogen oxides, NO _x (mg / km)		6.5	
PM (mg / km)		0	
Insurance groups		15E	15E/16E
SUSPENSION			
Front		MacPherson strut	
Rear		Torsion beam	
BRAKES			
Type	Front	Ventilated discs with ABS and integrated regenerative braking system	
	Rear	Solid discs with ABS	
Disc size (diameter x thickness mm)	Front	296 x 28	
	Rear	291 x 12	
Parking brake type		Pedal	
STEERING			
		Icon (16in wheel)	Excel/Excel Plus (17in wheel)
Type		Electric power-assisted rack & pinion	
Steering ratio		16.5:1	16.8:1
Turns (lock to lock)		3.31	3.12
Min. turning radius (m)	Tyre	5.5	5.8
	Body	5.9	6.2
EXTERIOR DIMENSIONS			
Overall length (mm)		4,645	
Overall width (mm)		1,775	
Overall height (mm)		1,575	
Wheel base (mm)		2,780	
Tread (mm)	Front	1,540 / 1,530*	
	Rear	1,545 / 1,535*	

Overhang (mm)	Front	930
	Rear	905
Ground clearance (mm)		145
Drag coefficient (Cd)		0.28
INTERIOR DIMENSIONS		
Length (mm)		2,690
Width (mm)		1,520
Height (mm)		1,220
Couple distance (mm)		1,635
LUGGAGE COMPARTMENT		
Luggage capacity, up to roof, 7 seats up (l)		232
Luggage capacity, up to roof, 5 seats up (l)		784
Luggage capacity, up to roof, 2 seats up (l)		1,750
Luggage floor to ground (mm)		700
Height (mm)		730 / 775**
Length (mm)		375 / 985**
Max. width (mm)		1,580
WEIGHTS		
Kerb weight (kg)		1,495 – 1,565
Gross vehicle weight (kg)		2,115

* 17inch wheels

** with 3rd row folded

The mpg figures quoted in this document are sourced from official EU-regulated test results. These are provided for comparison purposes and may not reflect an individual's actual driving experience.

TOYOTA PRIUS+ EQUIPMENT LIST

SAFETY	ICON	EXCEL	EXCEL PLUS
Driver and passenger front airbags	✓	✓	✓
Front side airbags	✓	✓	✓
Driver's knee airbag	✓	✓	✓
Front and rear curtain airbags	✓	✓	✓
ABS with EBD and Brake Assist	✓	✓	✓
Traction Control (TRC)	✓	✓	✓
Steering-assist Vehicle Stability Control (VSC)	✓	✓	✓
Pre-Crash Safety system	✗	✓	✓
Adaptive Cruise Control	✗	✓	✓
Front ELR seatbelts with pretensioners and force limiters	✓	✓	✓
Five three-point ELR rear seatbelts	✓	✓	✓
Driver and front passenger seatbelt warning light and buzzer	✓	✓	✓
Rear seatbelt indicator light	✓	✓	✓
Active front headrests	✓	✓	✓
Anti-theft system (immobiliser and alarm)	✓	✓	✓

Passenger airbag cut-off switch	✓	✓	✓
ISOFIX child seat restraint system	✓	✓	✓
Child-proof rear door locks	✓	✓	✓
Emergency braking signal	✓	✓	✓
Hill Assist Control	✓	✓	✓
INSTRUMENTS AND CONTROLS	ICON	EXCEL	EXCEL PLUS
Touch Tracer switches	✓	✓	✓
Head-up display	✓	✓	✓
EV, Eco and Power selectable drive modes	✓	✓	✓
Multi-function trip computer and Eco Drive Monitor	✓	✓	✓
Push button start	✓	✓	✓
Foot operated parking brake	✓	✓	✓
Intelligent Park Assist	x	✓	✓
COMFORT & CONVENIENCE	ICON	EXCEL	EXCEL PLUS
Front and rear electric windows	✓	✓	✓
'One-touch down' window function	✓	✓	✓
Electric power steering	✓	✓	✓
Tilt and telescopic-adjustable steering wheel	✓	✓	✓
Manual headlight levelling	✓	✓	✓
Remote fuel filler release	✓	✓	✓
Cruise control	✓	x	x
Adaptive Cruise Control	x	✓	✓
Smart Entry & Start	✓	✓	✓
Rain sensing front wipers	✓	✓	✓
12V power sockets (front and rear)	✓	✓	✓
Rear sunshades	✓	✓	✓
AUDIO, NAVIGATION AND COMMUNICATIONS	ICON	EXCEL	EXCEL PLUS
Six-speaker audio with DAB tuner and USB port	✓	✓	✓
Toyota Touch 2: touchscreen control for audio and information with Bluetooth, USB port and rear-view camera	✓	✓	✓
Toyota Touch 2 with Go: touchscreen control for audio and information with satellite navigation, advanced Bluetooth, access to Google Local Search, voice recognition, 3D maps, contacts function, 3 years' free map updates and rear-view camera	Opt	✓	✓
DVD rear seat entertainment pack	Opt	Opt	✓
VENTILATION	ICON	EXCEL	EXCEL PLUS
Automatic air conditioning	✓	✓	✓
SECURITY	ICON	EXCEL	EXCEL PLUS
Immobiliser with alarm system	✓	✓	✓
Remote central door locking	✓	✓	✓

SEATING & UPHOLSTERY	ICON	EXCEL	EXCEL PLUS
Cloth upholstery	✓	x	x
Leather upholstery	Opt	Opt	✓
Leather steering wheel trim	✓	✓	✓
Three slide/recline/fold second row seats	✓	✓	✓
Two slide/fold third row seats	✓	✓	✓
Height adjustable drivers seat	✓	✓	✓
Electric driver's seat lumbar adjustment	✓	✓	✓
Front seat seatback pockets	✓	✓	✓
Adjustable front headrests	✓	✓	✓
Adjustable rear integrated headrests	✓	✓	✓
EXTERIOR & BODY	ICON	EXCEL	EXCEL PLUS
16 in alloy wheels with full wheelcaps	✓	x	x
17in alloy wheels	x	✓	✓
Space saver spare wheel	✓	✓	✓
Electrically adjustable heated and folding door mirrors with integrated turn indicators	✓	✓	✓
Colour keyed door mirrors	✓	✓	✓
Colour keyed door handles	✓	✓	✓
Colour keyed bumpers	✓	✓	✓
Integrated tailgate spoiler	✓	✓	✓
Rear privacy glass	✓	✓	✓
Front fog lamps	✓	✓	✓
LED daytime running lights	✓	✓	✓
Metallic or pearlescent paint	Opt	Opt	Opt
OPTION PACKS	ICON	EXCEL	EXCEL PLUS
Protection Pack: body-coloured side mouldings with chrome inserts, bumper corner protectors and carpet mats	Opt	Opt	Opt
Parking Pack: front and rear parking sensors	Opt	Opt	Opt

Ref:170110M