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THE NEW TOYOTA PRIUS

1. THE REBIRTH OF THE PIONEER

The introduction of the all-new fourth generation Prius is the next milestone in the history and achievements of Toyota's hybrid electric technology.

The new Prius builds on the strengths and achievements of its predecessors and establishes new benchmarks in fuel economy, emissions and efficiency. Each successive Prius has delivered improvements in these areas, but the new Prius makes the biggest leap yet, with CO_2 emissions falling to a historic low.

This achievement is only one aspect of a car that has evolved to acquire new capabilities, more engaging styling and a fun-to-drive character, adding compelling dimensions to its customer appeal.

Powered by a new generation of Toyota's self-charging hybrid electric powertrain, the new Prius makes significant advances in fuel economy (from 83.1mpg) and provides a much more rewarding driving experience. Acceleration is smoother, more responsive, quieter and has a more linear feel that is better aligned to engine speed.

The new car's dynamic capabilities are rooted in its use of the first platform developed under the Toyota New Global Architecture (TNGA) philosophy. At a stroke, this endows the car with a lower centre of gravity (-2.5cm), securing better handling response and stability. It has also given the designers a freer hand to craft a car that has richer visual appeal, with lower lines overall and a more athletic profile. TNGA also helps define the "peace-of-mind" interior, with its excellent packaging, a lower and more engaging driving position and higher comfort levels. Load space is improved thanks to the use of a smaller, more energy-dense hybrid battery that is located entirely beneath the rear seats and a new double wishbone rear suspension system – features which do not intrude in boot capacity.

Prius remains Toyota's technological ambassador, a showcase for new, relevant technologies that raise levels of safety, convenience, performance and comfort.

Safety remains a priority, with the TNGA chassis optimised for excellent impact performance. The scope of the Toyota Safety Sense package is extended in the new Prius with addition of radar-managed Adaptive Cruise Control with Full Speed Range Following Function and a Pedestrian Detection function for the Pre-Collision Safety system.

The full hybrid electric powertrain has undergone extensive revisions to improve efficiency, reduce weight and sharpen performance. Detailed design changes to the engine have resulted in a 40 per cent thermal efficiency – a world-best performance for a petrol unit. Other hybrid system components have been made lighter and smaller and have been repositioned for optimum packaging, further contributing to the car's lower centre of gravity. The new nickel-metal hydride hybrid battery is more compact than in the previous generation model, with even better durability and charging performance.

In combination, these changes and innovations confound the popular notion of what an eco-car should be like to drive and to look at. They reflect how, now that hybrid technology has moved in 15 years from the fringes to become a mainstream choice, customers expect more than exceptional environmental performance; they equally require a car that offers style, ease of use and real driving pleasure.

The new Prius demonstrates the genuine rewards that remain to be enjoyed from Toyota full hybrid technology, together with appealing new characteristics in terms of performance, convenience and fun-to-drive quality, advantages that will steadily feed through to new generations of other Toyota hybrid models.

Prius Heritage

In 1997 the original Toyota Prius was launched with the declaration "just in time for the 21st century". As the world's first mass-produced hybrid-powered car, it was true to the Latin roots of its name in being ahead of its time.

That first car was a compact four-door saloon, powered by a new hybrid system featuring a combination of 1.5-litre VVT-i Atkinson cycle petrol engine and 33kW electric motor. Headline efficiency figures were 120g/km CO_2 emissions and an average 55.4mpg fuel consumption. This initial package was comprehensively redesigned and improved in the second generation model in 2003, with considerable gains in power and efficiency, plus a larger, more stylish, comfortable and practical hatchback design. The improved hybrid system adopted a smaller and lighter hybrid battery with a higher energy density. The fuel economy improved by 15 per cent to 65.7mpg and CO_2 levels fell to a new low of 104g/km.

The third generation Prius made its debut in 2009, delivering an even stronger combination of power and efficiency. The hybrid system's output was now more than a third greater than in the original model, while at the same time CO_2 emissions had fallen by a quarter and fuel consumption was 23 per cent better.

The first generation Prius created the hybrid vehicle market, the second generation raised the model's popularity with a more advanced image, and the third generation secured mass-market success, helping Toyota progressively roll out hybrid power to its mainstream model ranges.

In its first 18 years, Prius has reshaped the motoring landscape, bringing hybrid technology into the mainstream market and helping focus the attention of industry and consumers on how cars can be made cleaner and more efficient. The way in which people have come to understand, appreciate and adopt Toyota hybrid power is witnessed by more than eight million cumulative sales of Toyota hybrids worldwide since 1997, including more than 3.5 million Prius. The growth rate has accelerated in line with the technology's higher visibility and the availability of an increasing range of vehicles covering different market segments.

The fourth generation Prius will add further impetus to hybrid's market appeal, achieving its strongest environmental performance yet, while delivering much improved styling and driving dynamics.

Toyota's experience with the Prius has been central to its development of hybrid as a foundation technology for alternative powertrains, not just with conventional petrol and diesel engines, but with biofuels and hydrogen fuel cells as well. The basic technical premise that gave Toyota its breakthrough with Prius continues to support development of new mobility solutions, from the all-electric urban i-ROAD to Mirai, Toyota's first hydrogen fuel cell saloon.

The Market

The new car market has changed greatly in the 18 years since Toyota introduced the original Prius and set in motion its hybrid technology programme. Growing awareness of environmental issues and the need to protect natural resources have not only shifted people's perceptions of how a vehicle should perform, they have been reinforced by national and international legislation requiring manufacturers to reduce vehicle emissions.

These changes have helped Toyota hybrids establish themselves in markets worldwide and have also given impetus to other manufacturers in the development of rival hybrid systems and other alternatives to conventional petrol and diesel engines, such as all-electric vehicles and plug-in hybrids.

Hybrid has become Toyota's key competitive advantage, the principal quality that differentiates it from other manufacturers and which gives it a specific strength in the marketplace. This is reflected in the fact Toyota hybrids make up more than 50 per cent of all the alternative powertrain vehicles sold in Europe – more than all the other hybrids, plug-in hybrids and electric vehicles combined.

The way in which hybrid has become a driver for Toyota's success in Europe's core new car market segments is evidenced by sales figures for 2015 which show hybrids accounted for 63 per cent of all Auris sales and 41 per cent of Yaris sales.

Furthermore, hybrid is bringing more new customers to Toyota, with these models attracting significantly high levels of conquest sales from other brands – up to 63 per cent for Yaris Hybrid and 51 per cent for Auris Hybrid.

Toyota believes hybrid's market potential will increase further, with more people taking up the technology as the emissions performance of all vehicles comes under closer scrutiny and legislative control. At the same time, more manufacturers are following Toyota by introducing their own hybrid models, increasing competition and giving customers a wider choice.

Toyota will continue to enjoy the advantage of offering a full hybrid system, in which the electric motor can operate independently of the petrol engine. This allows the car to be driven in all-electric EV mode when possible, with zero fuel consumption and zero tailpipe emissions. These benefits are not available in "mild" hybrid systems, in which the electric motor can be used only to support the performance of a petrol or diesel engine.

Toyota believes that continuous improvement of its full hybrid electric technology will enable it to strengthen its market position, ahead of the wider uptake of alternatives such as plug-in hybrids, electric vehicles and fuel cell vehicles. Key challenges in securing this growth are to strengthen environmental performance while increasing the attractiveness of hybrids as desirable cars that are fun to drive. These qualities are fundamental to the new Prius, which sets new benchmarks for environmental performance while making a stronger emotional connection with customers through improved styling, quality and driveability.

2. THE THREE PILLARS OF THE NEW PRIUS

The new Prius is founded on the latest evolution of hybrid technology, delivering unprecedented efficiency and environmental performance. But beyond these credentials it embraces stronger emotional and performance qualities that give it wider and greater appeal to customers who appreciate eye-catching, original styling, high levels of sensory quality, practicality and a driving experience that is genuinely fun and rewarding.

The realisation of these qualities in the new Prius is based on three pillars: the Toyota New Global Architecture (TNGA)-based platform, design and styling, and a new

generation full hybrid system.

TOYOTA'S FIRST TNGA PLATFORM

The new Prius is the first model to use a chassis based on Toyota New Global Architecture (TNGA). Known as the GA-C platform, this will also underpin other future models and will be joined by further platforms suitable for different vehicle applications, from compact sports cars to SUVs.

Prius's TNGA platform plays a defining role in the car's essential fun-to-drive quality, giving the car a lower centre of gravity compared to the current model, and securing a more engaging driving position and more precise and responsive handling, with less body roll. This means better handling can be achieved directly from the quality of the chassis and body without having to use firmer suspension settings, or compromising ride and comfort.

It makes a big contribution to the improved driving dynamics – beyond what might be expected of an eco-car. This quality is further supported by a body that is 60 per cent more rigid than before thanks to extensive use of high-strength steels and additional reinforcement to the centre pillars' lower structure and the panel connection. The result is superior, direct and responsive handling.

These qualities are also enhanced by Prius's new double wishbone rear suspension, which produces one-third the level of shock when driving on uneven roads compared to the current model. To achieve better handling with more direct response, the front MacPherson strut suspension has been revised with an increase in the incline angle of the shock absorbers and the use of slant bearings.

The chassis is fully able to harness the more responsive character of the new full hybrid system. Greater stability is maintained, body roll is much reduced in high-speed lane changes and performance is smoother on rough surfaces. On winding roads, new Prius holds easily to the driver's intended line and there is outstanding straight-line stability when driving at speed.

Ergonomic excellence in vehicle packaging

The benefits of the TNGA extend to new, defined lay-out rules for the position of different state-of-the-art components which simplifies vehicle design in key areas without detracting from the styling qualities that give each vehicle its individual character and appeal.

For example, the driving components – items such as the pedals, steering column and driver's seat – will conform to one of five different lay-outs according to vehicle type and platform. Previously much time was spent on millimetre-adjustment to define the most suitable design and arrangement of these components to achieve the optimum driving position in every new model. The TNGA solution provides an ergonomically ideal combination to suit the vehicle, in line with the floor height provided by the platform. Each lay-out can be further refined with detailed adjustment to the pedal and pedal operation angles and the position and angle of the steering column.

TNGA also brings a new approach to the design of the engine compartment, with a focus on placing components lower down in a more rationally organised "clean and tidy" space. In the new Prius this allows for better packaging, a lower vehicle centre of gravity and a more attractive, lower bonnet, which in turn improves safety by giving the driver a clearer forward view.

Improved safety performance

Improved safety is another aspect of TNGA's contribution to the new Prius, and to future Toyota models. The new TNGA platforms and designs prioritise the highest active and passive safety standards. They are designed to meet the exacting standards of independent crash testing programmes worldwide and provide impressive levels of active and preventive safety through the functions and systems of Toyota Safety Sense.

STYLING AND DESIGN

New Prius is not simply "another green car," its design and high quality throughout give it greater emotional appeal and a powerful, desirable presence, underpinned by

the fundamental strengths of the new TNGA platform. As Toyota's most advanced car, it is appropriate that it is an image leader and the intention has been to produce a design that makes an immediate impact.

The car's new, low-slung stance – made possible by the TNGA platform – suggests an excellent driving performance, supported by a distinctive new body silhouette that is both athletic and aerodynamically efficient. The result is a "human-tech" design with strong emotional quality, fully exploiting the opportunity presented by the car's lower centre of gravity.

Prius Chief Designer Shunsaku Kodama, who at 43 was Toyota's youngest chief designer when appointed in 2011, led a team whose youthfulness generated a natural enthusiasm to challenge the status quo, even for a vehicle as revered as Prius. He says their focus was to "inject ego" into the car by crafting a more powerful, engaging and sporty image that would increase pride of ownership beyond Prius's traditional ethical profile.

Exterior

The design theme for the new Prius is captured in the contrast created between the rich curves and hard surfaces of the bodywork. The result is a new form that stands out with its smooth yet sharp use of lines.

The frontal design is true to Prius's heritage in making the Toyota emblem a strong focal point, but it also makes an impactful visual statement about its more advanced design and performance with a much lower bonnet height. Notably the front emblem sits at the same height above the road as it does on the GT86 coupe. New headlights have permitted slimmer, more striking headlamp units to be designed and these combine with an intricate but unfussy treatment of the fog lights and air intakes to give the car a distinctive and intelligent appearance.

The lower part of the front bumper and the shape of the lower grille and wheel arches have been designed to direct airflow around and under the vehicle. An electric shutter behind the large lower grille forms a novel feature in the car's airflow management. Derived from motor sport technology, it opens and closes in line with the airflow cooling

requirements of the engine; by remaining shut during cold starts, it helps save fuel by helping the engine reach its operating temperature more quickly.

In profile, Prius displays a silhouette that is lower and more athletic. The TNGA platform has allowed for significant reduction in height in key areas to create a lower, more dynamic appearance. The overall height has been reduced by 20mm compared to the current Prius, to 1,470mm. The peak of the roof has been moved forward by 170mm, and the belt line has been dropped and angled forward and lower, emphasising the car's stronger dynamic qualities. The rocker panel displays a light-catching surface that starts from the lowest part of the front bumper, runs beneath the front door, then races upwards, accentuating the car's low-slung stance.

The new model retains the 2, 700mm wheelbase of the current Prius, but is 60mm longer overall at 4,540mm. It is also 15mm wider at 1,760mm.

The new Prius has a unique aerodynamic treatment to the rear section of the roof, which supports the clean flow of air over and away from the vehicle. The length and angle of the rear spoiler have been precisely calculated and the bodywork tapers towards the rear corners, helping smooth airflow and reduce drag. The low roof and rear pillars are distinctively integrated using blacked-out panels that are shaped to draw air around the side windows to the rear of the car. Other aerodynamic aids include graduated vertical channels each side of the windscreen that direct airflow and rain water up and over the roof without generating wind noise. Aero stabilising fins are featured on the front quarter light trim and rear combination lamp housings, which control air turbulence along the side of the car. The new TNGA platform is also designed for the smoothest possible airflow beneath the car.

In combination, the car's low wind resistance features secure a world-class 0.24 coefficient of drag.

The rear end design flows strongly from the rear spoiler down through the bumper, with the wheel placement further emphasising the car's firmly planted stance. The slim, striking combination lamps have been moved to the outer edge of the car, following a sharp angle that is accentuated by the distinctive, unbroken line of the red LED tail

lights.

Toyota has produced a vibrant colour palette for the new Prius with seven exterior finishes available, including a new shade that is unique to the model, Hypersonic Red. This finish is created using a three-stage process that adds lustre, allowing light to pass through a translucent red layer and reflect off flakes of aluminium in the base layer.

“Peace of mind” interior

“Peace of mind” is the theme for the cabin, which is designed to be a welcoming, quiet and comfortable space, embracing the car’s “human tech” design concept by being futuristic and stylish, yet rational and ingenious.

The design has been developed to make an emotional connection with the occupants through an improved quality feel and the use of simple, multi-functional displays that present information at a glance. The peace of mind factor is supported by better visibility front and rear, contributing to both safer driving and a lighter, more pleasant cabin atmosphere.

Enhanced interior quality feel

The cabin has a strong design that is advanced, functional and makes a big visual impact. It inherits the intuitive concept of previous Prius generations by consolidating operational functions closest to the driver and placing the information functions further away. The functionality of this approach can be seen in the layered construction of the dashboard with distinct control and display zones.

The dashboard wraps gently around the driver and flows almost seamlessly into the door panels. The number of different parts that make up the instrument panel has been reduced, for example the piano black section is now a single unit. This creates a strong visual contrast with the areas of the dashboard and door panels, finished in a high-quality white material that is scratch-resistant.

The dominant centre cluster has a silver-finish frame and a “floating” design, created using a sculpted and near-invisible rear mounting. The seven-inch touchscreen panel

is designed like a tablet and allows intuitive operation of the audio and navigation functions, including “flick” actions to scroll through the displays. Two sound systems are available: a standard six-speaker audio package that gives rich and clear sound quality, and a 10-speaker JBL audio unit that uses GreenEdge™ technology to deliver powerful output and excellent sound quality from smaller, lighter and more energy efficient speakers.

The instrument cluster features dual 4.2-inch full colour TFT (thin film transistor) LCD screens with easy to read displays. The screen nearest the driver presents vehicle speed and ancillary information such as fuel level, odometer, trip meter, driving range, average fuel consumption, outside temperature and drive mode. The background colour changes according to the drive mode selected: blue for ECO, grey for Normal and red for Power. The second screen provides information about the hybrid system and eco-driving tips and performance, together with multimedia and climate control system details and driver assistance alerts.

The fine attention to detail can be seen in elements such as the Prius logo that decorates the air vents, while the high ergonomic quality extends to intuitive positioning and range of adjustment of the seats. The high sensory quality of the interior is further emphasised by a pleasingly tactile leather steering wheel trim. Two interior colour choices have been created for the new Prius – cool grey and black. Overall the cabin environment is light and spacious.

Quietness has always been a distinguishing characteristic of Toyota’s hybrid vehicles and the new Prius provides a cabin environment that exudes a genuine sense of luxury with exceptionally low noise and vibration levels.

Improved driving position

A reduction in the steering column angle from 24 to 20 degrees, a lowering of the driver’s hip point by 55mm and a new seat design all help create a more natural and engaging driving position. The range of tilt adjustment has been increased, to accommodate a wider range of driver heights.

The front seats have been completely redesigned to offer more comfort while at the same time saving weight and space. They offer a snugger fit, with better body holding that helps reduce fatigue on long journeys. The seat heating area has been increased, adding to the improved comfort level. The rear seats have also been revised for greater comfort and benefit from an improved armrest and cupholder.

Convenient storage provision

The efficient use of space inside the new Prius ensures ample provision of storage space. Thanks to the more compact hybrid system and HV battery and the new double wishbone rear suspension, there is no intrusion in the boot space. The cargo floor is set 110mm lower, expanding capacity to 457 litres when a temporary spare wheel is carried and 502 litres with a tyre repair kit.

In the cabin the storage points have been made larger or have been reprofiled to improve their usability. They include front and rear door pockets, an overhead console, glove box and a console box with a removable inner tray. The console box's soft-close lid doubles as an armrest and it opens sideways so it is easy for the driver to access. Two cupholders are provided in front of the console box.

NEW HYBRID SYSTEM

The New Prius introduces the next generation of Toyota's signature hybrid powertrain, the first in a new family of powertrains that builds on the two pillars that have made Toyota hybrids popular with drivers across the globe: on the one hand their fuel efficiency, and on the other the relaxed and carefree drive that they provide.

Toyota has focused its efforts on making this next generation of hybrids even easier and more intuitive to drive. The system has been set up so that it gives a natural, immediate, but smooth response to any accelerator pedal input. Refined and confident, it delivers the right level of performance.

But of course, fuel economy has been improved as well, as demonstrated by new Prius's combined cycle economy starting from as low 83.1mpg. The new hybrid electric system comes in a more compact package that is lighter in weight and lower

in cost. It reflects significant advances in battery, electric motor and petrol engine technologies.

Prius was among the first models to undergo new official testing designed to produce data that is closer to what customers might experience in day-to-day driving. Prior to the full roll-out of the new WLTP (World Harmonised Light Vehicles Test Procedure) fuel consumption and emissions data across the passenger car market in 2019, the new figures are presented as equivalents to the established NEDC (New European Drive Cycle) testing programme.

More information about the WLTP programme can be found here:
https://www.toyota.co.uk/world-of-toyota/environment/wltp.json

The new hybrid battery offers higher energy density. At the same time as maintaining power output, its size has been reduced by 10 per cent. Furthermore, it can now absorb 28 per cent more energy in the same amount of time, which means that it is faster charging. The electric motors are smaller in size, yet also provide a better power-to-weight ratio, and the thermal efficiency of the petrol engine – at 38.5 per cent already very high on the current Prius – is increased to 40 per cent – a world's best for a petrol unit.

Improved petrol engine

Prius's self-charging hybrid electric system features a 1.8-litre VVT-i Atkinson cycle petrol engine. However, the unit has been completely re-engineered to deliver significantly better fuel economy. The gas flow, combustion, cooling and knock control have all been improved and much more effective use is made of exhaust gas recirculation.

Toyota has developed a heat recovery system that uses spent exhaust gas to speed up the warming of engine coolant. This means fuel can be saved because the hybrid system is able to stop the engine earlier and more often when it isn't needed to power the vehicle. The engine is also helped to reach its optimum operating temperature more quickly thanks to a new dual-passage cooling system that can reduce the volume

of coolant flowing into the engine, when required. This helps improve efficiency during cold weather.

Further work has been done to reduce energy losses, particularly those caused by friction. Measures include the use of thin-section, resin-coated connecting rod bearings and a low-friction camshaft chain. Friction created by the piston skirts, rotating parts and oil pump has been reduced and a new electric water pump has also helped cut the level of losses.

Conical “beehive”-type springs have been adopted to reduce the valvetrain load. And, to ensure comprehensive improvement, the entire engine underwent CAE analysis to achieve the best rigidity and to reduce noise and vibration.

The intake and exhaust systems came under particular scrutiny, resulting in an engine that enjoys better breathing, air filtration, packaging efficiency, reliability and quietness. The air filter has been made smaller and reduced in height, which helped the designers bring down the line of the bonnet. The new intake system has a resonator that creates less noise at noticeable frequencies and the intake duct is made of a porous material that suppresses resonance.

A fresh air inlet duct has been added to make sure ample air volume is obtained at motorway speeds and a clever air/fluid separating structure has been added to keep water and snow from mixing with the intake air. Should the fresh air duct fill with water or snow, a secondary inlet serves as the air intake.

A thinner silencer secures optimum performance and noise reduction, while also improving the underbody aerodynamics and avoiding any intrusion on the space available in the boot.

The engine block has V-shaped drilled paths that reduce losses in water jacket pressure. There is also a new water jacket spacer which helps control cylinder wall temperatures in the combustion chamber, reducing friction and preventing engine knock, which in turn supports optimum ignition timing.

Engine cooling has been improved with a new cooling module structure and attachment, and a redesign that accommodates a lower bonnet line and helps reduce the car's centre of gravity. There is a new grille shutter behind the radiator which automatically closes when full airflow isn't required, improving aerodynamic performance and saving fuel.

While engine cooling helps improve anti-knock performance, it can lead to an increase in cooling heat loss. To help counter this, Toyota engineers have developed a new water jacket spacer to control temperature on the surface of the cylinder. This keeps engine oil warmer with lower viscosity and reduces the temperature fluctuation. This helps reduce friction and allows more engine torque to be generated. At the top end of the temperature scale it reduces temperatures in the combustion chamber.

The engine's maximum output of 97bhp/72kW is delivered at 5,200rpm, with peak torque of 142Nm at 3,600rpm.

World-best thermal efficiency

Thermal efficiency is a measurement of how well an engine converts the energy available in its fuel into usable energy to power the vehicle.

As a result of the large-volume exhaust gas recirculation system, improvements in combustion efficiency and innovative ways of managing heat and reducing friction, the new Prius's engine has a maximum 40 per cent thermal efficiency, the highest level in the world for a mass-produced petrol engine. This surpasses the 37 per cent of the first Prius's 1.5-litre unit and the 38.5 per cent level of the 1.8-litre engine in the third generation model.

Improved exhaust gas recirculation

The exhaust gas recirculation system in the new Prius has an EGR cooler which lowers the temperature of the gas being circulated, thereby reducing the temperature of the intake mixture and suppressing engine knock. This allows ignition timing to be advanced, which contributes to better thermal efficiency. Cooling loss has been reduced by eight per cent as a consequence.

Multi-shaft transaxle – a hybrid first

The new Prius has a redesigned transaxle that offers more efficient performance and packaging and reduced weight. Its smaller dimensions, notably a 59mm decrease in length, have allowed the auxiliary battery to be relocated to the engine compartment.

The transaxle houses four components: two electric motor-generators (MG1 and MG2); a single planetary gear; and a reduction gear to the final drive. MG1 serves primarily as a generator, converting any surplus power from the petrol engine into electricity, which can be stored in the HV battery. It also serves as the engine's starter motor. MG2 is the electric drive motor, which also acts as a generator when the car is in regenerative braking mode. It drives the car from start-up, at low speed and in EV (electric vehicle) mode and is the sole propulsion method when the vehicle is in reverse.

Improved hybrid software

Updates to the hybrid system software allow the new Prius to draw more on its electric drivetrain, allowing it to accelerate in a low engine rev range. It has also permitted the speed range of the electric motor (the range in which the electric motor can be used exclusively) to be increased by 60 per cent, compared to the current model. This means there is less dependency on the petrol engine at higher speeds, improving fuel economy.

Smaller, better electric motors

The two motor-generators are all-new and are smaller and lighter than before to suit the new multi-shaft transaxle design, with no negative effect on fuel economy.

Higher motor speed and new forced water-convection cooling in place of air cooling improve the efficiency of the electric-drive motor (MG2), which delivers 53kW of power and 163Nm of torque.

Fully redesigned power control unit

The power control unit (PCU) has been totally redesigned, resulting in a 33 per cent reduction in size, a six per cent weight saving and a 20 per cent reduction in electrical losses.

The PCU is the multi-purpose electrical heart of the vehicle, housing the inverter/voltage booster, a DC/DC converter for auxiliary power and the electronic control for the motor-generators.

In place of a belt-driven alternator, the new Prius uses a DC/DC converter to recharge the 12-volt battery, using energy from the HV battery.

Nickel-metal Hydride HV battery

The nickel-metal hydride (NiMH) battery is more compact, so can be located entirely beneath the rear seats, avoiding any intrusion in the load space. Its cooling is more efficient and it has a greater energy regeneration range. The new cooling system features an air filter in the intake bezel, which is located in the trim beneath the right rear seat.

Fuel efficiency

The fuel economy achieved by the new Prius marks the largest improvement between generations of the hybrid model, achieved thanks to improvements in the hybrid system and efficiency improvements throughout the car. This accomplishment reflects Toyota's philosophy of refining existing technology – the concept of having something good, then making it better.

Every aspect of the hybrid system has been made more efficient and these improvements deliver about half the gain that's been realised in fuel efficiency. The petrol engine uses less fuel; the electric motor-generators are smaller, lighter and more efficient; mechanical losses in the transaxle have been cut by 20 per cent; the power control unit is more efficient; and the nickel-metal hydride HV battery is lighter and more efficient. Further gains have been made by reducing the energy load of the air conditioning system, improving the rolling resistance performance of the tyres and creating a more aerodynamically efficient vehicle design.

3. HIGH-TECH THEN, NOW AND ALWAYS

Since the launch of its first generation in Japan in 1997, Prius has maintained its status as Toyota's technology ambassador, an eco-car that regularly brings valuable next-

generation technologies and innovations to the marketplace. The achievements made by the first three generations provide an impressive platform on which the all-new fourth generation Prius is able to make even greater advances.

The application of a wide range of new technologies in Prius takes safety and driver assistance to a higher level, improves comfort and gives clear and instant delivery of vital vehicle and performance data and information. The intention has been to create a truly integrated vehicle, with technology improvements that focus on a better experience for the driver and occupants.

Toyota Safety Sense

New Prius will make a significant advance in active and preventive safety measures with the adoption of Toyota Safety Sense. This package of integrated safety features is further extended in the new Prius with the addition of radar-governed Adaptive Cruise Control with Full Speed Range Following Function and a pedestrian recognition capability in the Pre-Collision Safety System.

These technologies help to reduce the risk of a collision and deliver additional benefits by making life easier for the driver and reducing fatigue.

Pre-Collision Safety System

At speed ranges of between 6mph (10km/h) and the vehicle's top speed this system uses a front-mounted monocular camera sensor and millimetre-wave radar sensor to detect vehicles and pedestrians on the road ahead. If it calculates a risk of a collision, it automatically warns the driver with a buzzer and alert in the multi-information display. At the same time the Pre-Collision Brake Assist engages to provide extra braking force the moment the brake pedal is pressed. If the system determines that the possibility of a frontal collision with a vehicle or pedestrian is extremely high, the brakes are automatically applied to help avoid the collision or help reduce the impact of the collision.

Toyota's improvement of the technology has enabled it to recognise and react to the presence of pedestrians as well as vehicles and to function across a wider range of speeds.

Adaptive Cruise Control with Full Speed Range Following Function

The new Prius's Adaptive Cruise Control with Full Speed Range Following Function makes use of the same millimetre-wave radar as the Pre-Collision Safety system to maintain a safe distance from the vehicle ahead, slowing the car to a standstill if necessary and accelerating smoothly back to the pre-selected cruising speed once the way is clear.

Lane Departure Alert

Lane Departure Alert uses the camera on the windscreen to track the vehicle's course between lane markings painted on the road surface. If it judges that the car is about to move out of its lane without the turn indicator being used, the system sounds a buzzer and lights up a warning on the multi-information display. If the vehicle is still moving outside the lane, it will apply steering force to help the driver bring the vehicle back on course.

Automatic High Beam

Automatic High Beam uses the same windscreen-mounted camera as the Lane Departure Alert. This recognises the lights of oncoming vehicles or traffic ahead, automatically switching the headlights to low beam to avoid dazzling other road users and returning them to high beam as soon as the road is clear, maximising night-time illumination and the driver's field of vision.

Road Sign Assist

Road Sign Assist uses the front camera to recognise principal highway/motorway warning and command signs. These are then repeated on the multi-information display, reducing the risk of the driver not being aware of speed limits, lane closures and other important information.

Advanced safety and driver assistance systems

The new Prius is available with additional systems that support safer driving by giving the driver better real-time information about the area immediately around the car, including a Blind Spot Monitor and Rear Cross Traffic Alert.

The Blind Spot Monitor uses radar sensors mounted on the rear corners of the vehicle to detect nearby vehicles in adjacent lanes as they move into the driver's blind spot. The driver is alerted to their presence by LED warning indicators in the door mirror on the appropriate side of the car. The LED indicators will remain illuminated as long as the vehicle remains in the blind spot. If the driver operates the turn indicators, intending to move into the path of the approaching vehicle, the LEDs will flash rapidly to draw further attention to the hazard.

The same radars are used to provide the Rear Cross Traffic Alert, monitoring approaching traffic from either side as the vehicle is reversed out of a parking space and warning the driver if any vehicles are detected.

A new, intelligent parking sensor system helps avoid the kind of low-speed bumps that can happen during parking manoeuvres, regardless of accelerator and brake operation. It will also mitigate damage if contact does occur.

Simple Intelligent Parking Assist system

The new Prius showcases Toyota's new Simple Intelligent Parking Assist (S-IPA) system, which uses an array of sensors to identify viable parking spaces and surrounding objects. Improvements to the technology allow it to work in parking spaces up to 22 per cent smaller than previously.

The driver stops the car next to the parking space and pushes a single button to engage S-IPA, which guides the car to the correct position for reverse manoeuvring into the space. This system makes use of the parking assist sensors located on the vehicle's corners.

Multi-information display

Toyota has improved the look and performance of the multi-information display in the driver's instrument binnacle. Data and images are now presented in full colour with high resolution graphics on a dual, 4.2-inch display. The right-hand section presents speed, fuel level and other basic data and the left section is a multi-display where the driver can select preferred content using a switch on the steering wheel.

The efficiency of the driver's driving style and the car's progressive fuel economy can be monitored, broken down into periods of five minutes, last kilometre, last five kilometres and one month.

Colour head-up display

For the first time in a Toyota vehicle, Prius is available with a colour head-up display. This projects essential vehicle data and alerts on to the lower section of the windscreen, making information instantly and easily readable without the driver having to taking their eyes off the road ahead. Content includes vehicle speed, the state of battery charge, hybrid system status, Adaptive Cruise Control with Full Speed Range Following Function setting and Lane Departure Alert.

Intelligent S-FLOW automatic air conditioning

The automatic air conditioning system is smaller, lighter and uses less power, benefiting from a new S-FLOW function to improve efficiency. It registers whether the front and rear passenger seats are occupied, using a sensor in the front seat, and detects when either of the rear doors is opened and closed, adjusting ventilation and heating performance accordingly, minimising air flow around any empty seats. It also monitors the air conditioning temperature settings, external temperature and the amount of sunlight to calculate the most efficient operating parameters.

Other advances in the system include a new evaporator that uses less energy and a new electric compressor that is quieter and delivers better cooling performance.

As well as making the cabin environment more comfortable, the system's multiple new features also improve fuel efficiency. The driver can monitor how efficiently the air conditioning is being used with a new Eco-judge function that calculates a performance score (out of 100) every second. Performance can be called up on the multi-information display; after the engine is turned off, an average score is displayed, with tips on how the air conditioning can be better operated.

Wireless phone charger

The new Prius is available with a wireless phone charger, located below the centre stack. Using Qi technology, this allows compatible smartphones to be recharged without having to connect a cable.

4. GREATER DRIVING APPEAL

The new Prius's lower centre of gravity and increased body rigidity help deliver a safe and secure drive. Passengers enjoy a smooth, comfortable ride, with minimal roll.

The TNGA concept has produced an increase of more than 60 per cent in body rigidity, compared to the previous model, by using a ring-shaped, cyclical frame, laser screw welding (with a greater number of weld points) and structural adhesives. Together these contribute to achieving a more stable ride.

New Prius also uses a higher proportion of high-tensile strength steel in its construction, making good use of high-strength, lightweight hot-stamp materials to achieve rigidity of 980Mpa and higher. The content of this quality of steel in the vehicle has increased from three to 19 per cent. Furthermore, Toyota's advanced Global Outstanding Assessment (GOA) methodology for designing safer cars brings the benefits of light weight, stability and excellent collision safety performance.

The driving experience has been improved with better acceleration feel, achieved through an upgrade of the hybrid system control unit. Optimal use of the battery and electric motor have minimised the "rubber band" feeling when accelerating – the sense of a delay in acceleration when you press the throttle.

Improved real-world performance

The new Prius accelerates from nought to 62mph in 10.6 seconds. Highway overtaking acceleration from 50 to 75mph (80 to 120km/h) can be accomplished in just 8.3 seconds and the top speed is 112mph (180km/h).

The new hybrid system's output – petrol engine and electric motor combined – is 121bhp/90kW, and the drivetrain now delivers its power in a more user-friendly manner. The new Hybrid System allows the system to draw more on its electric power,

which means that acceleration feels more natural with the engine revs building up gradually as the car picks up speed.

Day to day usability has also been significantly improved and the fourth generation Prius is the first to be able to pull a trailer, thanks to its 725 kg towing capacity (braked and unbraked).

Selectable drive modes

The new Prius maintains the smooth, quiet and refined drive that has characterised previous generations of the model, its shift-by-wire transmission making it as easy to drive as an automatic. The driver can choose from three selectable driving modes – Normal, ECO and Power – to suit driving conditions and personal preference.

The driver can also switch to EV mode, for short distances in pure EV driving, such as entering a parking space or garage.

Normal mode provides a suitable balance between fuel economy and throttle responsiveness. Switching to ECO mode optimises the powertrain and vehicle systems to prioritise fuel saving, adjusting throttle response and air conditioning performance. Power mode gives emphasis to acceleration feel.

The new Prius benefits from a drive assist system to provide a more responsive driving experience. The adaptive system continuously monitors the vehicle's G-forces to understand driver behaviour and habits, a function activated when the driver selects Power mode. The hybrid system responds to the driver's desire for more sporty performance, adjusting engine braking performance and throttle response.

Improved front suspension

New Prius's high-rigidity body provides the ideal platform for a sophisticated development of its MacPherson strut front suspension, which has been revised with a focus on improved steering, handling response, stability and ride comfort. With a new rear suspension and improvements to the brakes and steering, Prius benefits from new underpinnings throughout.

The front suspension hardware, geometry and calibration have all been revised and the system has been equipped with new shock absorbers with a 37 per cent reduction in strut friction, and a new piston valve that can generate damping force at very low damper speeds. This delivers better body control and optimum damping characteristics at high damper speeds, reducing impact harshness when travelling on rough and uneven surfaces.

Impact harshness has also been addressed with recalibration of the coil spring rates and spring pre-loading. The front anti-roll bar is mounted on a ball joint to help keep uncontrolled body roll to a minimum and the sliding parts in its bushings have been given a fluorine-resin coating to minimise friction.

New double-wishbone rear suspension

The double wishbone rear suspension is all-new, designed to give Prius higher levels of handling stability and ride comfort, including a more than 50 per cent improvement in impact shock damping. The layout offers numerous advantages compared to the current torsion beam system, including greater flexibility when it comes to fine-tuning its calibration.

The design builds on the foundation of the car’s increased body rigidity and strengthened suspension mounting points. Key design features in its hardware and geometry include wide-mounted, forward-angled shock absorbers and compact coil springs. These give reduced friction for improved ride quality and their size and positioning free up more space, allowing for a lower floor in the boot. Special aero under covers have been designed to smooth air flow around the new suspension system, part of a comprehensive underfloor aerodynamic package.

The forward angle of the new shock absorbers and careful tuning of the tyre movement curve combine to reduce longitudinal, low-frequency vibrations and suppress road shock. The rigidity and geometry of the suspension arms have been optimised to control toe change during suspension travel to give supple yet responsive handling and confidence-building stability.

Special attention was paid to reducing impact harshness through geometry and individual tuning of the bushings, with rubber bushings replacing ball joints in some key areas to allow for further fine tuning and reduction of high-frequency vibrations. The new double wishbone system features several bushings per side, compared to just one on the current torsion beam design; each can be tuned for different stiffness characteristics in two planes.

For example, the new trailing arm bushing is larger and calibrated to reduce lateral-force steer while controlling longitudinal force compliance. Soft trailing arm bushings and a low static friction property in all the bushings reduce road shock.

The trailing arm mount is positioned relatively high to optimise suspension travel, with the shock absorber strut and trailing bush mounting angles set to reduce harshness, road shock and stuttering. The anti-roll bar mounting system and calibration have been defined to secure high levels of roll rigidity for a comfortable, ‘flat’ ride. The previous torsion beam suspension did not feature a separate anti-roll bar.

New electric power steering

Prius was at the heart of Toyota’s breakthroughs in development of its electric power steering (EPS) and many other models have since adopted the technology to benefit from its practicality and fuel-saving qualities.

The steering has been redesigned and recalibrated, enhancing each phase of its operation. Feel, effectiveness and feedback have all been improved and a new, quicker steering gear ratio gives a sportier quality.

The changes to the steering hardware and control software combine with the benefits of the car’s new platform, lower centre of gravity and revised front suspension to improve controllability and the turning radius (from 5.2 to 5.1m). Engineers have produced new steering rack ratios: 13.4:1 for models using 15-inch wheels (previously 17.6:1) and 13.6:1 for those on 17-inch wheels (previously 14.6:1). The system has gained a new, high-rigidity intermediate shaft that contributes to better steering effectiveness and greater feedback from the road surface, and it features a new, brushless electric motor that provides extra assistance when needed.

The steering's centring feel has been improved by using an elastic support structure for the worm gear mechanism and a new EPS control logic. The EPS logic has reduced the "no assistance" area when the steering is at or near centre, to give extra controllability in straight-line driving. A further new feature is EPS damping control, which gives the system the same feel in both the steering and return phases.

The new Prius provides a more progressive build-up of assistance as steering is applied and greater controllability on steering return. The new control logic also generates a lighter feel at low speeds and a precise feel and quick response at higher speeds.

Electric power assistance is always available, even when the petrol hybrid engine is shut down to save fuel.

New wheels and tyres

Toyota has developed two new lightweight alloy wheels which complement the performance of the new Prius's suspension and improve handling stability by being more rigid. This higher rigidity also has an impact on the level of tyre resonance that's generated, thus reducing road noise.

The 15-inch wheel is 30 per cent more rigid and half an inch (+12.7mm) wider at 6.5 inches (165.1mm), enabling better grip to be gained from the new low rolling resistance tyres. The larger, 17-inch wheels feature new resin ornamentation and are 0.7kg lighter than the equivalent wheels featured on the current Prius, reducing the car's overall unsprung weight and contributing to better handling and fuel economy. Keen to make savings wherever possible, Toyota has also shaved 1kg off the weight of the temporary spare wheel.

All versions of the new Prius feature a Tyre Pressure Warning System. A sensor on each wheel triggers a warning light on the instrument panel, if tyre pressure drops to a level that could compromise performance and safety. The system has a locating function that shows which wheel/tyre is affected.

Electronic brake control with better feel and security

The new Prius has a state-of-the-art electronically controlled braking system (ECB) that precisely balances the requirements of both regenerative and friction braking. The system also cooperates with the vehicle's active safety technologies, including the ABS and vehicle stability control (VSC).

The regenerative braking function uses the electric drive motor as a generator, converting kinetic energy created when the vehicle slows down into electricity which can be stored in HV battery.

The friction-braking system uses lightweight, floating aluminium front callipers with lightweight resin pistons and ventilated 255 x 25mm discs. The rear solid discs measure 259 x 9mm and are also fitted with aluminium callipers.

A new active hydraulic brake booster and new pedal ratio help deliver quiet performance, controllability and improved braking feel. For ease of driving there has been a reduction in the degree of play in the pedal and an extension to the side of the brake pedal to make for smoother movement when switching from the accelerator.

UK MODEL RANGE AND EQUIPMENT

- New UK grade line-up, featuring Active, Business Edition, Business Edition Plus and Excel trims
- Toyota Safety Sense with additional features – standard on all versions

True to Prius's tradition of being a pathfinder for advanced technologies, the new model combines an improved, more efficient full hybrid powertrain with a number of new safety, comfort and convenience features.

As well as being technically advanced, stylish and well-equipped, new Prius remains a thoroughly practical car that is easy and enjoyable to drive.

Equipment specifications

Toyota has introduced a new grade line-up for Prius, strengthening its appeal for business car drivers with new Business Edition and Business Edition Plus versions. Active and Excel versions are the entry point and top of the range models respectively.

All Prius models benefit from LED headlights with Automatic High Beam, Smart Entry with push-button start and the Toyota Touch 2 multimedia system with touchscreen control and DAB radio reception. An enhanced Toyota Safety Sense package is also standard, as detailed in the safety section above.

A new dual-zone air conditioning system is also standard, equipped with a function that detects whether the front passenger seat is occupied and automatically adjusts air vent opening and air flow accordingly, for more efficient and energy-saving operation.

Higher grade models gain more advanced features, such as a colour head-up display (a Toyota first), wireless phone charger, blind spot monitor with rear cross traffic alert, heated front seats and an auto-dimming rear view mirror.

New Prius marks the first European appearance of SIPA, Toyota's new Simple Intelligent Park Assist system. As well as providing automatic steering into a parallel or series parking space, the system can also help the driver exit a tight space. An automatic braking system provides a safeguard against colliding with parked vehicles or obstacles.

Key features of **Active** grade models include: -
15-inch alloy wheels
Dual-zone automatic air conditioning
Smart Entry (driver's door) and push-button start
LED headlights
Toyota Touch 2
DAB radio
Driver's seat electric lumbar adjustment
Dual 4.2-inch colour TFT multi-information displays
Forward Collision Warning with Autonomous Emergency Braking

Adaptive Cruise Control
Road Sign Assist
Lane Departure Alert
Automatic High Beam

Additional/enhanced features on **Business Edition** grade models include: -
Soft-touch cabin trim
Wireless phone charger
Smart Entry (all doors and boot)
Colour head-up display
Blind Spot Monitor
Rear Cross Traffic Alert
Heated front seats
Leather steering wheel trim
Auto-dimming rear-view mirror

Business Edition Plus adds the following: -
17-inch alloy wheels
Toyota Touch 2 with Go (satellite navigation and connectivity functions)
Simple Intelligent Park Assist
Front and rear parking sensors

The new Prius **Excel** is additionally equipped with: -
Leather upholstery
JBL premium audio system
Rain-sensing wipers
Toyota 2 with Go Plus (satellite navigation and connectivity with added functions)

Toyota Safety Sense
Toyota Safety Sense provides an integrated package of safety warning and assistance systems on all versions of new Prius, with the addition of two new features.

A radar-controlled Adaptive Cruise Control system is included, which automatically keeps the car a safe distance from the vehicle ahead, and the pre-collision warning

system is able to detect pedestrians in the car's path, as well as other vehicles. These are in addition to the Pre-Collision Brake Assist, Autonomous Emergency Braking, Lane Departure Alert, Road Sign Assist and Automatic High Beam.

Colours and trims

New Prius is available in seven exterior colours, including Hypersonic Red, a new pearlescent shade that offers extra depth and reflective qualities. The interior is available in Cool Grey or Black, with matching trim and cloth upholstery. Leather seats (Excel grade) are in Cool Grey with black shoulder sections, or Black with contrast blue stitching.

New Prius option packs

A number of option packs are available for new Prius to add style, protect the cabin and bodywork and provide extra in-car entertainment.

The Parking Pack (Active and Business Edition) equips the car with front and rear parking sensors, while the Protection Pack (all versions), adds front and rear mudflaps, scuff plates, a rear bumper protection plate and a boot liner.

Customers can also opt for a Black or Chrome Pack (all versions), which adds rear diffuser, front fog lamps and side sill trims in a piano black or bright chrome finish.

A range of integrated rear seat entertainment options is available, including single or twin iPad holders and DVD players. These can be specified for all models in the range.

PRIUS TIMELINE AND UK SALES

YEAR	MONTH	EVENT
1997	December	First generation Prius launched in Japan.
1998		Prius named Japanese Car of the Year.
2000	October	Prius launched in the UK.
2002	June	Prius becomes first hybrid car to complete an FIA-sanctioned event, the Midnight Sun to Red Sea Rally.
2004	January	Second generation Prius launched in the UK.

	June	Prius gains five-star Euro NCAP adult occupant safety rating with equal highest score in its class.
		Hybrid synergy Drive wins the 2004 International Engine of the Year title with a record high score. It also takes wins in the Best Fuel Economy, Best New Engine and 1.4 to 1.8-litre Engine categories.
	November	Prius is named European Car of the Year. Worldwide sales pass 250,000.
2005	January	Prius sets new world land speed record for a hybrid power vehicle, achieving 130.794mph at the Bonneville Salt Flats.
	May	Range revised with suspension, NVH and steering adjustments,
	June	Toyota Hybrid Synergy Drive wins best fuel economy and best engine in 1.4 to 1.8-litre category at the 2005 International Engine of the Year Awards.
2006	May	Toyota Hybrid Synergy Drive wins best fuel economy and best engine in 1.4 to 1.8-litre category at the 2006 International Engine of the Year Awards.
	June	Worldwide sales pass 500,000.
	November	Intelligent Park Assist (IPA) made standard on T Spirit grade.
2007	May	Prius is top-ranked model in the J.D. Power & Associates UK customer satisfaction survey. Toyota Hybrid Synergy Drive wins Best fuel Economy category in the 2007 International Engine of the Year awards.
2008	May	Prius is top-ranked model in the J.D. Power & Associates UK customer satisfaction survey for the second year running.
2009	January	The third generation Prius makes its debut at the Detroit motor show.
	July	Prius is named Whatgreencar Car of the Year.
	August	Third-generation Prius UK sales launched. Prius achieves five-star Euro NCAP crash safety rating.
	September	Prius Plug-in Hybrid concept car unveiled at Frankfurt motor show.
	October	Prius named Japan Car of the Year.

2010	May	Hybrid Synergy Drive names Green Engine of the Year for sixth year in succession.
	July	Safety Pack option introduced, including Pre-Crash Safety system and Adaptive Cruise Control
	October	A special 10th Anniversary edition Prius is released in the UK in a limited run, with additional equipment and styling features.
2011	March	Prius restyled with new front-end design and revised cabin; specifications adjusted, with introduction of Toyota Touch and Toyota Touch & Go.
2012	March	The 2012 Prius is launched, with revised front-end styling and cabin and the introduction of Toyota Touch & Go Plus on T Spirit models.
2013	June	Global Prius sales pass three million units.
2015	September	The new, fourth generation Prius makes its debut at the Frankfurt motor show.
	November	Toyota announces details of the UK model range and pricing. Prius is offered in a new grade line-up and all versions will feature Toyota Safety Sense.
2016	March	First cars are delivered to UK customers.
	April	Prius is given top five-star rating in independent Euro NCAP safety testing.
	July	Prius received the Best Green Car award from Auto Express and Best Eco Car title from Telegraph Cars.
	November	Prius is Carbuyer's Best Economical Car and Green Car of the Year in the Women's World Car of the Year awards.
	December	Euro NCAP names Prius as the safest large family car to undergo its 2016 test programme.
2017	January	Prius is the Best Family Car in the UK Car of the Year awards.

UK Prius sales in 2017: 4,888

Cumulative UK Prius sales since launch (2000): 78,231

PRIUS TECHNICAL SPECIFICATIONS

HYBRID SYNERGY DRIVE	
Type	Series/parallel, full hybrid
System output (bhp/kW)	121/90

ENGINE		
Engine type	2ZR-FXE (Atkinson cycle)	
No. of cylinders	Four in-line	
Valve mechanism	16-valve DOHC with VVT-i	
Bore x stroke (mm)	80.5 x 88.3	
Displacement (cc)	1,798	
Compression ratio	13.0:1	
Fuel system	EFI	
Octane No.	95 or greater	
Max. power (bhp/kW @ rpm)	97/72 @ 5,200	
Max. torque (Nm @ rpm)	142 @ 3,600	
Emissions level	Euro 6	
ELECTRIC MOTOR		
Motor type	Permanent magnet, synchronous	
Max. power (bhp/kW)	71/53	
Max. torque (Nm)	163	
HIGH-VOLTAGE BATTERY		
Battery type	Nickel-metal hydride	
Nominal voltage (SC V)	201.6	
No. of battery modules	28	
Battery capacity (kWh)	1.31	
TRANSMISSION		
Transmission type	Electric CVT	
Differential gear ratio	2.834	
PERFORMANCE		
Max. speed (mph)	112	
0-62mph acceleration (sec)	10.6	
FUEL CONSUMPTION*	**15in wheel**	**17in wheel**
Combined	83.1	78.5
Extra urban (mpg)	80.7	76.3
Urban (mpg)	85.6	80.7
Fuel tank capacity (l)	43	
EMISSIONS* & INSURANCE	**15in wheel**	**17in wheel**
CO_2 (combined, g/km)	78	82

Insurance groups		14E	
SUSPENSION			
Front		MacPherson strut with anti-roll bar	
Rear		Double wishbone with anti-roll bar	
BRAKES			
Front		Ventilated discs	
Rear		Solid discs	
Disc size (diameter x width, mm)	Front	255 x 25	
	Rear	259 x 9	
Parking brake		Pedal-type	
STEERING		**15in wheel**	**17in wheel**
Steering type		Electric power-assisted rack and pinion	
Steering ratio	15in wheel	13.4:1	
	17in wheel	13.6:1	
Turns lock-to-lock	15in wheel	2.84	
	17in wheel	2.85	
Turning radius – tyre (m)	15in wheel	5.1	
	17in wheel	5.4	
TYRES		**15in wheel**	**17in wheel**
		195/65 R15	215/45 R17
EXTERIOR DIMENSIONS		**15in wheel**	**17in wheel**
Overall length (mm)		4,540	
Overall width (mm)		1,760	
Overall height (mm)		1,470	
Wheelbase (mm)		2,700	
Front track (mm)		1,530	1,510
Rear track (mm)		1,520	1,540
Front overhang (mm)		950	
Rear overhang (mm)		890	
Ground clearance (mm)		123	
Drag coefficient (Cd)		0.24	
INTERIOR DIMENSIONS			
Length (mm)		2,110	
Width (mm)		1,490	
Height (mm)		1,195	

LUGGAGE COMPARTMENT	
VDA capacity, rear seats up (l)	457 (with temporary spare wheel) 502 with tyre repair kit
VDA, rear seats down, loaded to tonneau cover (l)	1,054
VDA, rear seats down, loaded to tonneau roof (l)	1,633
WEIGHTS	
Kerb weight (kg)	1,375 – 1,400
Gross vehicle weight (kg)	1,775
Towing capacity –unbraked/braked (kg)	725

* NEDC equivalent figures for WLTP test results, introduced February 2018

PRIUS EQUIPMENT SPECIFICATIONS

SAFETY	ACTIVE	BUSINESS EDITION	BUSINESS EDITION PLUS	EXCEL
Toyota Safety Sense: Pre-Collision System with Pedestrian Detection; Adaptive Cruise Control; Lane Departure Alert with steering control; Automatic High Beam; Road Sign Assist	✓	✓	✓	✓
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)	✓	✓	✓	✓
Vehicle Stability Control (VSC)	✓	✓	✓	✓
Hill-start Assist Control	✓	✓	✓	✓
Front seatbelt pretensioners	✓	✓	✓	✓
Three three-point rear seatbelts	✓	✓	✓	✓
Driver and front passenger seatbelt warning light and buzzer	✓	✓	✓	✓
Rear seatbelt indicator light	✓	✓	✓	✓
Tyre Pressure Warning System	✓	✓	✓	✓
Whiplash Injury Lessening front seats	✓	✓	✓	✓
Anti-theft system (immobiliser and alarm)	✓	✓	✓	✓
Passenger airbag cut-off switch	✓	✓	✓	✓
ISOFIX child seat restraint system	✓	✓	✓	✓

Child safety rear door locks	✓	✓	✓	✓
Rear Cross Traffic Alert	×	✓	✓	✓
Blind Spot Monitor	×	✓	✓	✓
INSTRUMENTS AND CONTROLS	**ACTIVE**	**BUSINESS EDITION**	**BUSINESS EDITION PLUS**	**EXCEL**
Dual 4.2in TFT multi-information display	✓	✓	✓	✓
Colour head-up display	×	✓	✓	✓
EV, Eco and Power drive modes	✓	✓	✓	✓
Foot operated parking brake	✓	✓	✓	✓
COMFORT & CONVENIENCE	**ACTIVE**	**BUSINESS EDITION**	**BUSINESS EDITION PLUS**	**EXCEL**
Front and rear electric windows	✓	✓	✓	✓
All windows with 'one-touch down' and anti-trap functions	✓	✓	✓	✓
Electric power steering	✓	✓	✓	✓
Tilt and telescopic-adjustable steering wheel	✓	✓	✓	✓
Remote fuel filler release	✓	✓	✓	✓
Simple Intelligent Park Assist	×	×	✓	✓
Front and rear parking sensors	×	×	✓	✓
Smart Entry & Start (driver's door and boot)	✓	×	×	×
Smart Entry & Start (driver/ front passenger and boot)	×	✓	✓	✓
Rain sensing front wipers	×	✓	✓	✓
Dusk-sensing headlamps	✓	✓	✓	✓
12V power sockets (front and rear cabin)	✓	✓	✓	✓
Auto-dimming rear view mirror	×	✓	✓	✓
AUDIO, NAVIGATION AND COMMUNICATIONS	**ACTIVE**	**BUSINESS EDITION**	**BUSINESS EDITION PLUS**	**EXCEL**
Six-speaker audio	✓	✓	✓	×
JBL 10-speaker audio	×	×	×	✓
Toyota Touch 2: 7in touchscreen, six-speaker audio system with AM/FM/DAB tuner and CD/MP3 player, Bluetooth, rear-view camera, Aux-in and USB port.	✓	✓	×	×
Toyota Touch 2 with Go: 7in touchscreen, six-speaker audio system with RDS tuner and CD player, satellite navigation, on-line connectivity, advanced Bluetooth, rear-view camera, Aux-in and USB port.	Opt	Opt	✓	×
Toyota Touch 2 with Go Plus: 7in touchscreen, six-speaker audio system with RDS tuner and CD player, satellite navigation, text-to-speech function, SMS text and email display, on-line	Opt	Opt	Opt	✓

connectivity with access to online services, WiFi hotspot, advanced Bluetooth, rear-view camera, Aux-in and USB port.				
Wireless phone charger	×	✓	✓	✓
VENTILATION	**ACTIVE**	**BUSINESS EDITION**	**BUSINESS EDITION PLUS**	**EXCEL**
Dual-zone automatic air conditioning	✓	✓	✓	✓
SECURITY	**ACTIVE**	**BUSINESS EDITION**	**BUSINESS EDITION PLUS**	**EXCEL**
Immobiliser with alarm system	✓	✓	✓	✓
Remote central door locking	✓	✓	✓	✓
SEATING & UPHOLSTERY	**ACTIVE**	**BUSINESS EDITION**	**BUSINESS EDITION PLUS**	**EXCEL**
Cloth upholstery	✓	✓	✓	×
Leather upholstery	×	×	×	✓
60:40 split folding rear seats	✓	✓	✓	✓
Heated front seats	×	✓	✓	✓
Power lumbar support on driver's seat	✓	✓	✓	✓
Adjustable front headrests	✓	✓	✓	✓
Three adjustable rear integrated headrests	✓	✓	✓	✓
EXTERIOR & BODY	**ACTIVE**	**BUSINESS EDITION**	**BUSINESS EDITION PLUS**	**EXCEL**
15in alloy wheels	✓	✓	Opt	Opt
17in alloy wheels	×	×	✓	✓
Front fog lamps	✓	✓	✓	✓
LED headlights	✓	✓	✓	✓
LED rear lights	✓	✓	✓	✓
LED daytime running lights	✓	✓	✓	✓
Electrically adjustable, heated and auto-retracting door mirrors	✓	✓	✓	✓
Temporary spare wheel	✓	✓	×	×
Tyre repair kit (no cost option)	Opt	Opt	✓	✓
Metallic paint	Opt	Opt	Opt	Opt

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