

2018 Toyota Prius Remains A Hybrid Benchmark

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Around the world, its name is synonymous with “hybrid.” Almost two decades after the first Toyota Prius was introduced in the U.S., hybridization has become common, and the Prius still leads in North American hybrid sales. It’s also one of the world’s most fuel-efficient vehicles without a plug, with EPA-estimated 58 city / 53

highway / 56 combined MPG fuel economy ratings (Prius Two Eco).

For the 2018 model year, Prius Four and Four Touring grades receive a new standard 11.6-inch high-definition multimedia display. The tablet-like operation of the vertically-oriented screen provides drivers with easy access to major functions and allows navigation graphics to be brightly visible. Drivers and front passengers will find the pinch and zoom functionality familiar, speaking to the enhanced premium touch that the screen brings to these grades.

Toyota offers the 2018 Prius in seven model grades, each one equipped as standard with Toyota Safety Sense P (TSS-P). Using millimeter-wave radar and a monocular camera sensor to help detect a pedestrian, a vehicle, and lane markers in the surrounding area, TSS-P provides a comprehensive bundle of active safety features designed to help protect drivers and passengers from harm and includes: Pre-Collision System with Pedestrian Detection (PCS w/ PD), Lane Departure Alert with Steering Assist (LDA w/ SA), Automatic High Beams (AHB), and Full-Speed Range Dynamic Radar Cruise Control (DRCC).

An available Prius Appearance Package adds additional flair with two-tone black and gunmetal front and rear bumpers, piano black side skirt rocker panels, and 17-inch 5-spoke alloy wheels with gunmetal inserts on the Three and Four Touring grades.

Common among all Prius models is a premium interior with a wrap-around dash design, form-hugging seats, easy-to-use controls and exemplary visibility. With up to 65.5 cubic feet of cargo space, Prius provides flexibility in the gear on board. Whether it's farmer's market finds, sports gear or supermarket hauls, Prius has it covered.

Most Efficient Prius Ever

Every generation of the Prius has one key element in common: it exceeded the fuel efficiency of the previous generation. The latest version of its Hybrid Synergy Drive combines the output of a 1.8-liter 4-cylinder gasoline engine and two motor/generators through an electronically controlled planetary-type continuously variable transmission (CVT). Shift-by-wire technology, which uses electric signals to transmit shift operations, offers light, fingertip operation from the dash-mounted shifter. The regenerative brake system switches the motor into a generator to recover the wheels' kinetic energy as electrical power, storing it in the hybrid battery.

The fourth-generation Prius uses smaller, lighter hybrid components than before, including a lithium-ion hybrid battery that replaced the nickel-metal hydride battery (excluding the Prius One and Two standard grade). The battery's smaller size and lower profile allow it to be packaged under the rear seat, rather than beneath the luggage area, yielding more cargo space. The Prius Two Eco grade provides the highest fuel efficiency thanks to its lighter weight and further optimized aerodynamics.

Fuel Economy Factors

The electric motors and battery don't get all the credit for the high fuel economy in the Prius. The internal combustion engine (I.C.E.) does its part, too. The 2ZR-FXE 1.8-liter 4-cylinder gasoline engine achieves more than 40 percent thermal efficiency, thanks to reduced internal friction and improved combustion. It's also quieter than the previous generation's engine. Toyota found extra efficiency by cooling the Exhaust Gas Recirculation (EGR) system, and by using exhaust heat recirculation to quickly bring engine coolant up to optimal temperature.

Because the Prius, under certain circumstances, can operate in battery mode alone, it incorporates a Vehicle

Proximity Notification System (VPNS) to help alert pedestrians and cyclists. A small in-vehicle speaker emits a low but noticeable warning tone when traveling below approximately 15 mph, and the sound changes with vehicle speed.

Beating the Wind

The newest-generation Prius cheats the wind without cheating passengers out of room. The vehicle's sleek body yields a 0.24 coefficient of drag (Cd), among the lowest of current production passenger cars. Aerodynamic efficiency is supported by such details as an automatic grille shutter that reduces drag by closing when airflow to the radiator is not needed. Aero stabilizing fins on the underfloor covers, front quarter window garnish and tail lamps likewise keep air moving in a smooth pattern.

High Visibility

Prius lighting is as advanced as it looks. Standard Bi-LED headlamps dominate the striking front fascia, and the rear combination lamps echo the design theme.

Seeing out of the Prius is easier than ever, too. The design gives a clear view to the rear, thanks to larger rear door glass and larger fixed rear quarter windows. A backup camera comes standard on all grades, and, as on the previous model, a full-width glass panel beneath the rear spoiler aids rearward visibility.

Toyota's New Global Architecture (TNGA)

Beneath the Prius' dramatic bodylines is the solid foundation of Toyota's New Global Architecture (TNGA). In this current-generation Prius, the platform introduced a new high-strength body structure, double-wishbone style multi-link rear suspension and a lower center of gravity. All combine to yield a highly engaging driving experience while also providing a markedly smoother and quieter ride than the previous generation. The gasoline engine, electric motor and seating positions are lower than in previous models to increase front and rear head room while at the same time achieving a low, aerodynamic stance.

The TNGA platform's structural strength greatly contributes to the high level of handling responsiveness, steering feel and ride quality in the Prius. Hot-stamped and high tensile steels, which allow for intricate forms that are both lightweight and strong, are used extensively throughout the body. Aluminum components, including the hood and rear doorframes and brake calipers, help keep vehicle weight in check. Innovative fastening methods, including laser screw welding and advanced adhesives, contribute to structural strength.

Sophisticated Suspension

A double-wishbone style multi-link rear suspension, seen on some of the world's best sport sedans, is also under the Prius. As in those cars, this configuration endows the Prius with outstanding ride quality and handling agility. The design also maximizes trunk space.

The Prius Touring grades take full advantage of the suspension's inherent handling benefits by using special tuning and 17-inch wheels with 215/45R17 tires. On other grades, light-alloy 15 x 6.5-inch wheels wear aerodynamic wheel covers to reduce drag and wind noise. On all Prius models, low-rolling resistance tires are optimized for grip.

Step on the brake pedal in the Prius, and instead of a cable, foot pressure signals the Electronically Controlled Brake System to apply appropriate braking force through the active hydraulic brake booster. The system

coordinates control between the hybrid system's regenerative braking and the hydraulic brake force to provide optimal performance and feel.

Information Central

Inside the Prius, the intuitive concept of previous models continues, anchored by a central gauge panel. The panel features dual 4.2-inch full-color TFT (Thin Film Transistor) multi-information displays, and their content can be changed using steering wheel controls. The display background color changes depending on the selected drive mode. With Power mode selected, the background appropriately glows red. Choosing Normal mode brings on a soothing blue glow.

The display provides a multitude of readouts for hybrid energy information and much more, and the driver can choose how much information to receive by selecting either Simple or Segmented display modes. Simple mode shows a large vehicle speed display, remaining fuel, drive mode indicator, outside temperature, odometer functions and cruising range. The Segmented display presents more detail about hybrid operation, including instantaneous fuel economy, hybrid battery state of charge and a suite of ECO functions to encourage efficient driving habits.

A driving support display shows the status of features such as Full-Speed Range Dynamic Radar Cruise Control, Lane Departure Alert and other systems.

Quiet, Please

The Prius' hybrid powertrain runs very quietly, and aerodynamic design blunts wind noise. A sound-insulating laminated windshield and numerous sound absorbers in the dash structure reduce noise intrusion. Higher-grade models feature sound-insulating laminated front door glass, as well. The carpeting is backed by a thick silencer pad, and a urethane-based headliner, along with the ribbed structure of the front pillar trim, helps absorb sound.

Keeping it Cool

Depending on model grade, the tilt and telescoping steering wheel comes wrapped in urethane or SofTex synthetic leather that features surface temperature-regulating properties to make it feel more comfortable in hot or cold weather. Even the air conditioning system, which uses a quiet electric compressor, works intelligently. The Smart-flow (S-FLOW) mode directs airflow only to seated occupants to conserve energy and maximize comfort.

In the Prius Two Eco grade, heat-insulating IR-cut windshield glass substantially reduces the transmission of infrared rays, enhancing interior comfort and also reducing the air conditioning system's workload. In cold weather, a ceramic-type heater warms the cabin quickly.

Entune Multimedia and Wireless Charging

The Prius is all high-tech inside, as well, connecting with devices and music through its Entune Audio systems. Wireless charging (except base Prius One, Two, and Two Eco grades) works with Qi-compatible phones or other devices.

The standard Entune Audio system on the Prius One, Prius Two, and Prius Two Eco grades includes the Entune Multimedia Bundle with a 6.1-inch touch-screen display, AM/FM CD player, six speakers, auxiliary audio jack, USB 2.0 port with iPod connectivity and control, advanced voice recognition, hands-free phone capability,

phone book access and music streaming via Bluetooth wireless technology, plus Siri Eyes Free mode and an integrated backup camera display.

Moving up to the Prius Three and Prius Three Touring grades, customers will enjoy Entune Premium Audio with Integrated Navigation and Entune App Suite, which includes all the previously-mentioned audio features plus a 7-inch high resolution touch-screen with split screen display, Entune App Suite, HD radio, HD predictive traffic and doppler weather overlay, AM/FM cache radio, SiriusXM All Access Radio with 3-month complimentary trial and Gracenote album cover art.

Taking the multimedia experience to a premium one, the Prius Four and Prius Four Touring grades come standard with an 11.6-inch high-resolution, vertically-oriented screen that operates similarly to other touchscreen mobile devices and tablets.

As part of a package, the Prius Four and Four Touring grades exclusively offer the Entune Premium JBL Audio system with Integrated Navigation and App Suite. To all features of the base and mid-grade systems, it adds 10 JBL GreenEdge Speakers in six locations creating a personal concert hall on wheels.

The Entune App Suite includes Destination Search, iHeartRadio, MovieTickets.com, OpenTable, Pandora, Facebook Places, Yelp and Slacker Radio plus real-time info including traffic, weather, fuel prices, sports and stocks. Access to Entune App Suite is subscription free. (See toyota.com/entune for details.)

Push (Button) to Park

The Prius can even help park itself. When activated, available Intelligent Parking Assist (IPA) uses ultrasonic wave sensors to automatically steer the Prius into – or out from – parallel parking spaces, or reverse it into a perpendicular space. The Toyota-first Intelligent Clearance Sonar provides visible and audible warnings if the driver gets too close to detected obstacles on the vehicle's sides – an excellent tool for navigating tight parking garages, for example.

A full array of supplemental restraint system (SRS) airbags includes a driver and front passenger Advanced Airbag System; driver and front passenger side airbags; front and rear curtain airbags; a driver knee airbag, and a front passenger seat cushion airbag.

Peace of Mind Warranty Protection

Toyota's 36-month/36,000 mile basic new-vehicle warranty applies to all components other than normal wear and maintenance items. Additional 60-month warranties cover the powertrain for 60,000 miles and against corrosion with no mileage limitation. The hybrid-related components, including the HV battery, battery control module, hybrid control module and inverter with converter, are covered for eight years/100,000 miles.

The Prius also comes standard with ToyotaCare, a complimentary plan covering normal factory-scheduled maintenance for two years or 25,000 miles, whichever comes first. And, exclusive for Prius, three years (over the normal two) of 24-hour roadside assistance.