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## 2010 Toyota Prius **All-new version more refined, more efficient.**

### **Overview**

The all-new 2010 Toyota Prius offers no surprises, just significant improvement. It's sleeker and better looking, and more powerful while delivering an EPA-rated 51/48 mpg City/Highway, up by 3 miles per gallon.

The hybrid mechanicals are lighter by 65 pounds, while being more efficient and presumably stronger. The 1.8-liter gas engine is also new, producing more horsepower while being more efficient. Top speed has flown to 112 miles per hour from 103 mph, slam-dunk evidence that the Prius is a lot slicker package at half that speed.

Acceleration performance is adequate, 0 to 60 mph in 9.8 seconds, while the CVT, or continuously variable transmission, is smooth.

There are three driving modes: EV, ECO and Power. EV is all electric, for very short distances at speeds under 25 mph; ECO provides the best fuel mileage, without noticeably compromising performance; and Power, the default mode, is needed for brisk acceleration.

Handling is nimble enough at slow speeds, and the brakes are sensitive while being stacked with electronic capabilities for safety. There are seven airbags including one for the driver's knees. The ride can be harsh over the wrong bumps, and interior noise is surprisingly high despite increased sound insulation. Many owners might not notice, but others will, with so many Prius buyers in search of tranquility.

Standard magic includes Touch Tracer Display, projecting info before your eyes, so you can keep them on the road. Input comes from the pilot at the controls on the steering wheel, including not just audio and cruise control, but also climate control and trip computer, with telephone and other controls available.

Options include such technological tricks as a moonroof and solar-powered ventilation system; remote pre-air conditioning to cool the car down to ambient temperature before you climb in on a hot day; a warning beep when you're unsteady in your lane; radar cruise control; Intelligent Parking Assist that will parallel park the Prius with no steering or throttle input from the driver; and pre-collision emergency braking to slightly reduce the impact when you don't see an accident coming but the car's radar does.

### **Model Lineup**

The 2010 Toyota Prius (\$21,000) comes in trim levels, starting with Prius I. Because Toyota wants to stay focused on the Prius name, there are no models with names of their own. There are the Prius II, III, IV and V. Prius II (\$22,000) is fully equipped and is expected to be the most popular. Prius III (\$23,000) adds a premium JBL sound system and Bluetooth capability.

Prius IV (\$25,800) adds leather seats and upgraded trim, heated front seats, water repellent window glass, plasma instrument cluster, HomeLink, and a Smart Key system. Prius V (\$27,270) adds 17-inch alloy wheels, LED headlamps, and foglamps.

Options include the Navigation Package (\$1,800) with voice-activated DVD navigation with Bluetooth, XM traffic and a backup camera. The Solar Roof Package (\$3,600) adds a solar powered ventilation system to the Navigation Package. The Advanced Technology Package (\$4,500) includes a pre-collision system that automatically dabs the brakes and reduces crash impact speed by a slight amount, radar cruise control, Lane Keep Assist, Intelligent Park Assist, and the Navigation Package.

Safety equipment standard on all models includes dual-stage front airbags, side airbags in front, airbag curtains, and driver's knee airbag; active headrests; tire pressure monitor with warning light; anti-lock brakes with Brake Assist and Brake Force Distribution; and a sophisticated stability control system working with traction control. Optional safety equipment includes a pre-collision system that uses the same radar antenna as the radar cruise control. It applies the brakes harder than the driver does if a collision is imminent and applies them even if the driver doesn't to reduce the collision impact by 0.7g.

## **Walkaround**

There are significant changes in the styling of the new 2010 Prius, all of them good we think, resulting in a sleeker car. The coefficient of drag has been reduced to 0.25 from 0.26, enabling the Prius to continue its rein as one of the world's most slippery passenger cars. It's about half an inch longer, all in the cowl, a result of A-pillars that are moved forward to radically rake the windshield; and about 3/4-inch wider.

The roof is the same height, but its apex is moved back 3.9 feet, smoothing the aerodynamic wedge. It's got a discreet double hump that adds character and curiosity.

The upper grille opening is smaller and tidier to more efficiently move air over the hood. A new lip over the rear deck not only improves air flow, it eliminates the chopped-off-tail look of the previous Prius. The fender arches are a bit more aggressive, almost bulkier looking, but they reflect additional aero improvement. The bumpers are sharper and squarer at the corners than before. You can't see the underbody covers with splitters, but they too are part of the aerodynamic scheme, to achieve that 0.25 Cd.

The blue-tinted headlights are elegant wraparound trapezoids, with optional LED lenses consuming 17-percent less battery power. There's a styling tweak, like a wave or a lip or, with a stretch of the imagination, a lightning bolt at the top, and it works, to deliver distinction. The taillights are standard LED, reducing power draw by 88 percent.

The rear wiper is huge, and effective in keeping rain off all that glass back there. The matt black trim around the windows on the Prius II and III trim levels doesn't do much to complement the car; the satin black finish on the Prius IV and V is nicer.

## **Interior Features**

The Prius interior is satisfying, at least with the optional leather we tested. There's a nice cozy cockpit feeling in the driver's seat, nestled by a stylish center console that runs from dashboard to between the seats at a gentle slope. The CVT shift lever is located there, just ahead of the world's easiest-to-reach cubby. Oddly, the heated seats button is located on the floor under the console, as if they ran out of wire and it couldn't reach.

The upper and lower gloveboxes hold a magnificent 12 liters. The all-new front seats are comfortable with increased bolstering and adjustability, addressing complaints about the previous Prius. The trim looks nice, and Toyota claims it's made of plant-derived resin ecologically friendly plastic with excellent recycling characteristics.

There's 20 mm (0.8 inches) more rear legroom, partly due to thinner front seatbacks. The 60/40 split rear seats (with folding armrest having two cupholders) drop flat, yielding nearly 39.6 cubic feet of cargo volume, easily accessible through the big liftgate. And there's another 2 cubic feet in the tray for tools and laptops, hiding under the floor of the cargo area. The compact spare tire is another level down. A tonneau cover for the cargo area is standard.

There's good forward visibility even over the long dashboard, stretched by the steeply sloped windshield, although, as with other aero cars (the Honda Fit comes to mind), you can't see the front corners. And visibility out the rear glass is somewhat compromised by the aerodynamically sloped roofline.

The space-shippy four-spoke steering wheel with many controls is interesting and not ugly, and speaking of space ships it's cool to watch the multi-function display of the instrument panel, although the novelty might wear off. Or not. On a 5-inch-wide screen, there are graphs and images, including an Energy Monitor, displaying the battery charge in real time; a Hybrid System Indicator that reveals the efficiency of your driving technique; fuel mileage in 1- or 5-mile increments; past fuel mileage; and a Touch Tracer Display that projects steering-wheel-control information upward so you can keep your eyes on the road.

Curiously, in a vehicle made for techies, the USB port isn't standard equipment.

### **Driving Impressions**

For 2010, the new four-cylinder engine goes from 1.5 to 1.8 liters, and horsepower increases from 76 to 98. Combined with the electric motors, there's a total of 134. The larger engine provides more torque, allowing the Prius to maintain freeway speeds at lower rpm, boosting fuel mileage. It's an Atkinson Cycle engine (different valve timing and breathing). CO2 emissions have been reduced from a score that already tops the charts.

The Hybrid Synergy Drive system, with two compact motor generators within the transaxle, increases operating voltage from 500V to 650V. Gear drive replaces chains in the motor, increasing the motor's rpm to 13,500 from 6400. The improved Power Control Unit (inverter) is more compact and cooler running. The Nickel-Metal Hydride battery pack is more compact and powerful, like all the rest. All told, there's a savings of 65 pounds.

The accessory drive belts have been eliminated, with such things as the AC compressor and water pump now driven electrically. This means the air conditioner works, though not full blast, even with the engine turned off.

There are three driving modes: EV, or all-electric, with a very limited distance at 25 mph or less (if there's enough juice in the battery), most useful for underground parking garages (or maybe your teenage son taking his girlfriend home late); ECO, which minimizes fuel consumption by reducing the throttle opening and restricting the air conditioning; and Power for full acceleration.

The difference between Power and ECO is 4.1 seconds from 50 to 70 mph, versus 5.8 seconds. If you're in ECO and floor it, it will kick itself into Power, which is also the default mode when you start it up. So you have to set ECO mode at every stop, to get the best mileage. But we wonder why anyone would drive around town in Power mode, because ECO feels no slower. The Prius accelerates from 0 to 60 mph in 9.8 seconds, usually fast enough though slow by modern standards.

When you accelerate hard and it kicks into Power mode, it can be abrupt, like a transmission kick-down. But like all hybrids it uses a CVT, continuously variable transmission, which is technically not an automatic because it doesn't have gears. Most of the time you're not aware the Prius CVT is there, which is how they're supposed to work.

The Prius is EPA-rated at 51 city and 48 highway, for a combined 50 miles per gallon. We got 54 mpg driving gently but still sometimes using Power mode, over 23 miles of city-highway driving; and later 70.5 mpg over a 34-mile street course in a competition with other automotive journalists. We averaged 28 mph, about average for the group.

The winner, a specialist hypermiler, got 94.6 mpg driving by all the tricks. He averaged 19 mph, moving at about 30 mph in the far right emergency lane of the 50-mph highway, showing that it takes travel in an unreal world to achieve those big numbers. An opposite leadfoot extremist managed to get 26.8 mpg. The other 26 of 28 drivers got between 63.3 and 75.3 mpg.

A flaw in the new Prius is its bumpy ride: pretty rough over patchy stuff, we noted during our test drive. There's a new suspension with a slightly wider track and increased roll rigidity. Earlier we rode for more than an hour in the back seat of an '08 Prius (the previous-generation model) and it didn't feel as harsh. The standard 15-inch wheels are fitted with low-rolling-resistance tires (195/65R15), and maybe that explains it. We also drove a Prius with the optional 17-inch wheels and 215/45R17 tires, which felt slightly smoother although theoretically they should be firmer; we got better mileage with them, 57.4 mpg, although the Prius chief engineer said the 17s deliver about 5-percent less mileage.

We and other autojournos thought the road noise seemed high, despite Toyota's claim that the new Prius is quieter, and maybe both things are true. Press materials say there's more sound insulation, though the insulation weighs 7.7 pounds less, a benefit of new materials designed to absorb sound instead of insulate against it.

The four-wheel disc brakes (replacing rear drums) are sensitive, and we could hear rubbing at low speeds with ours, partly because there was no engine noise when backing off, and possibly because of the regenerative braking component: the more you use the brakes, the more battery juice you build up, enabling you to use EV mode more. On our 70.5-mpg run, we gently used the brakes a lot in city traffic, so we would get as many blocks as possible out of EV mode.

The handling is nimble around town, although it turns heavy and slow, though not imprecise, if you try to drive it aggressively in corners, something not too many Prius owners do (an understatement). However its cornering is much improved with a new chassis and suspension. The slower you drive it, the better it is. The new Prius has gained 110 pounds overall, mostly from its stiffer body structure, despite the 65-pound loss in the hybrid componentry.

We tested the optional Intelligent Parking Assist, part of the Advanced Technology Package available for Prius V, which parallel parks the car for you, if the space is big enough. It needs a margin of 7 feet 9 inches, more than half the length of the car; most drivers can handle a space that big with no worries, so it's fair to ask what's the point, unless you're a total spaz at parallel parking. Like many high-tech innovations, it does it because it can.

You can set the distance you desire to the curb. Pull up, line up, press the button, it tells you when to go; then release the brake pedal and take your hands off the steering wheel and let it do its thing.

## Summary

The all-new 2010 Toyota Prius is evolutionary, with substantial improvements in styling and the hybrid powertrain. It's sleeker and better looking, and achieves a combined 50 miles per gallon. With almost the same exterior dimensions but more interior room, it's considered a midsize sedan. The suspension is sharp over patchy pavement, and road noise is surprisingly high, possibly because of tires with low rolling resistance. The interior design is futuristic without being out there, and the new front seats are comfortable. The available leather and upgraded materials are classy.

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