Road Beat: Toyota Prius Prime has a kick

Toyota Prius Prime is one of the best hybrids on the market. Photos/Larry Weitzman

By Larry Weitzman

As most of you know I am not a big fan of electric vehicles. They are expensive to build and have limited utility creating range anxiety. If Tesla didn't have government and utility subsidies of about 25 percent of the purchase price, they would have folded long ago. Even though their stock is over $300 a share and their market cap is equal to Ford's, they have yet to turn a real profit and that's with receiving $1 billion in government subsidies directly and indirectly in the last five or six years. Over the last five years, losses totaled about $2 billion, including the income from subsidies.

And that’s not counting discounted electrical rates to the purchaser, another subsidy.

But the Prius Prime is a different animal. You will never run out of electrons because of its 1.8L 95 hp (at 5,200 rpm) four-cylinder engine tucked under the hood that meshes perfectly using a CVT transmission with its two-electric motor/generators of 31 and 71 hp, respectively. But the maximum combined hp is limited to a total of 121 hp which will not exactly create escape velocity.

Outside the Prime looks right out of the Jetsons. To call it beautiful would be an overstatement, but if you want to be recognized as driving a plug-in hybrid, saving the world, then this is your ride. From the rear, it somewhat reminds me of a 1959 Chevy with its aircraft carrier flight deck. While it may not look sleek with its big, busy front end, its co-efficient of drag is a minimal 0.25. While a compact car in size (183L x 70W x 58H inches), inside dimensions are mid-size.

Electricity is provided by about a five to six-hour charge from 120-volt household GFI circuit which provides about 6 kWh of energy to the 8.8 kWh L-I battery. The reason is that the Prime only can use about 6 kWh of its battery energy before it morphs into a regular hybrid, like a standard Prius. But even with half of its total energy remaining and in EV mode, if you go full throttle at about 50 mph while running pure EV, the engine lights off to add some more fuel to the fire.

Specifications

Price $27,965 to about $36,000

Engine and motors

Gasoline: 1.8L Inline four cylinder DOHC, 16 valve 95 hp @ 5,200 rpm
105 lb.-ft. of torque @ 3,600 rpm
Electric Two motor/generators 31 hp and 30 lb.-ft. of torque and 71 hp and 120 lb.-ft. of torque
Battery 8.8 kWh Lithium-ion, 265 pounds

Transmission

Continuously Variable

Configuration

Transverse front engine and motors/front wheel drive

Dimensions

Wheelbase 106.3 inches
Length 182.9 inches
Width 69.3 inches
Height 57.9 inches
Track (f/r) 60.2/60.6 inches
Ground clearance 4.8 inches
Fuel Capacity 11.3 gallons
Passenger volume 91.5 cubic feet
Cargo volume 19.8 cubic feet
Weight 3,375 pounds
Wheels 15X6.5-inch alloy
Tires 195/65X15
Turning circle 33.4 feet
Coefficient of drag 0.25

Performance

0-60 mph 9.71 seconds
50-70 mph 5.38 seconds
50-70 mph uphill 10.20 seconds
Top speed Estimated at 115 mph
Fuel economy for the first 22-25 miles its infinite, in hybrid EPA rated at 55/53/54 mpg city/highway/combined. In suburban driving expect 60-65 mpg and on the highway (level) at legal speeds 57 mpg.

With a full charge in pure EV, it was able to easily run 24-25 miles pure electric. You can see from my pictures how many days I averaged 199.9 mpg even driving more than 25 miles as I recharged in between drives and most of these drives were in 10-12 mile stages at 50 mph plus with little stop and go and up and down some 3-4 percent grades.

As to performance, the Prime in hybrid mode which you can do even with a full charge and save the battery for later, the Prime averaged 9.71 seconds in 0-60 mph runs which is very comparable to a regular Prius. Passing times in hybrid mode from 50-70 mph was 5.38 seconds and the same run up a 6-7 percent grade lengthened that time to 10.20 seconds, again very comparable to the current Prius. In pure EV all those times expand by about a second. The CVT has a gear called “B” and it really does a nice job of recharging the battery and controlling speed in a long downgrade. I used it extensively in controlling speed down the nine-mile Spooner Summit.

But here is the deal, it feels spunkier than those times reveal, even when pure electric. In normal or even somewhat aggressive driving the Prime will surprise you, especially

from 10-50 mph. Yeah, sure there isn't much left after 70-75 mph, but the Prime is not about racing and if you compare it to the sedans of the 1970s or earlier, the Prius rocks pretty good.

But buying a Prius Prime is about minimizing gasoline energy use which it does admirably. It's easy to achieve 4 miles out of every kilowatt hour of energy which costs on average in the United States about 13-14 cents a kWh or about 3.5 cents a mile for the energy costs. And it will return about 22-25 miles on a full charge without ever lighting off the gas engine. I made several 24 mile round trips where to computer shows a fuel economy of 199.9 mpg, meaning you used no gas. I did not use the A/C during the entire test.

In a climb over the Sierra to Carson City, I started with a full charge and depleted the energy allowed until hybrid mode kicks at about 18 miles, but had climbed in elevation about 1,200 feet up Highway 50. The 210-mile round trip averaged an astounding 66 mpg and no plug-in charging was done during the trip. But I did pick up enough energy from the downhill into Carson City to spend 10-12 miles around Carson City on pure EV.

Hybrid highway full economy is just a bit better than the EPA data which indicates fuel economy numbers of 55/53/54 mpg city/highway/combined. At 70 mph, the Prime in hybrid mode averaged 57 mpg in two, two way runs. Prime will cruise at 70 mph in EV mode as well, but in about 20 minutes the hybrid will automatically kick in. Overall fuel economy exceeded 60 mpg.

Handling will surprise most drivers as it could be called nimble. Sure, standard rubber is tall and comparatively skinny 195/65X15 tires, but it has fully independent suspension. And while certainly not a Mini-Cooper, it acquitted itself well when pushed in the twisties. As "Dirty Harry" said, "A man got's to know his limitations." Ditto for the Prime. It

certainly exceeded my expectations and what I thought its limitations would be.

Prime rides superb. It is a supple well controlled ride best demonstrated when leaving a driveway that had 45 degree angled four inch curbs as it absorbed the bump better than most every vehicle ever tested and equaling the best such as a Lexus RX450h. It’s a bit cushy, but I doubt any Prime buyer will take his car to the race track or ever participate in a traffic light grand prix. Prime buyers are interested in comfort, quiet and technology. At 70 mph in pure EV there is no engine rpm and even in hybrid mode, it’s so quiet, no one cares what the rpm is as it will always pull down 55 mpg or better. While wind and engine noise are well subdued, tire noise can be an issue and on coarser roads it was an issue. Maybe it is the low rolling resistance tires. I’ll take one mpg less fuel economy and quieter tires.

As a leader in technology, Prime has all the safety features and four-wheel disc brakes with every acronym. Headlights were excellent.

Inside is a Toyota quality interior with top quality materials. The comfortable seats were done in Toyota’s quality SofTex leather like material and were quite comfortable. Rear seating is also decent. But the focal point of the Prime interior is the 12-inch (ok, so it’s really 11.6 inches, but it’s still big) info screen for GPS, climate control (interior climate as we can’t control the exterior climate although the Prime is a great example of adaptation) and the media/sound system. It is a touch screen which is not my favorite as I still prefer buttons and knobs for the accuracy and more positive feel.

Instead of a conventional binnacle in front of the steering wheel it uses a centered dash which uses letters and digits that are too small, but the info that is accessible is amazing, not just fuel economy, but miles per kWh, daily

driving fuel economy, a driver's rating system for economical driving and so much more. It is quite the "entertainment system."

Pricing for this line of plug in hybrids starts at $27,100 for the Prius Prime Plus, $28,800 for the Prius Prime Premium and $33,100 for the Prius Prime Advanced. Considering the alliterations, I am surprised its name isn't the Prius Prime Phantastic. Add to all those numbers $865 for the boat ride from Aichi, Japan. But here is the deal with EVs and plug-in EVs (PHEV), is the price of the car artificially low. At the sticker price, is Toyota making an appropriate profit as they do on their conventional cars? While Toyota won't tell us, it is important to know as at the sticker price this technology makes lots of dollars and sense. But if the price is artificially low then two things. In your own self-interest, the Prime becomes a great buy, but as to the industry itself, the Prime becomes an expensive exercise for the rest of us. Without government mandates, would the Prime have ever been built?

But here's the deal. Prime is a very comfortable, go anywhere car. It achieves incredible fuel economy. It performs nicely. And it's priced to be affordable. Who cares if Toyota is losing money on every car, although we don't know that. Sure, it's different looking, but Toyota hybrid buyers want that "exclusivity." And if you live within 12 miles of your work, you won't use any gas (you might want to use Stabil in your tank to keep it from going bad), or if you can plug in for 5-6 hours on a 110V or half that time on a 220V receptacle, you can go about 25 miles one way. Now here is the kicker. Many utility companies will subsidize your electric bill for your car and your cost per mile will be 2-3 cents a mile.

Larry Weitzman has been into cars since he was 5 years old. At 8 he could recite from memory the hp of every car made in the U.S. He has put in thousands of laps on racetracks all over the Western United States.