

# Requirements



From the economic turmoil of 2008, the need for automakers to deliver improvement is under great strain. Attention is focused so heavily on their immediate survival that long-term well-being isn't taken seriously. In fact, consumers are being misled into believing abundant & affordable solutions are coming soon and that the need isn't as urgent as those concerned insist. Unfortunately, offering reduced emission & consumption choices quickly is crucial. With so many dirty & wasteful vehicles now on the road, the amount of time it will take before they are finally replaced in favor of technology that is both cleaner and more efficient is great. Many, many years are required for that transition.

## 2009

It is the pivotal year. The market in general had perceived hybrids as a niche, not paying close enough attention to realize just how far the technology had progressed. Those prior 8 years of real-world consumer ownership around the world had been thought of as a novelty, something to talk about, a future yet to come. But in 2009, that finally changes. The push for hybrid production to become a large portion of each automaker's plan will be recognized as a practical step forward. Proving the technology has already been accomplished. The need for a competitive technology that is responsible for business, as well as the environment and energy resources, is easy to accept now. No more holding on to terrible market practices of the past. The time has come to fully embrace hybrids.

## History

Back in 2003, before the Iconic Prius was rolled out, requirements about what the industry needed were declared. Those factors identified a platform which could be built & sold in large quantity, describing a practical & affordable hybrid for the masses... quite unlike some failed attempts the market has seen since then. It's not about publicity. Actual change requires making a difference on a scale reaching many consumers.

The next chapter in history will hopefully address the need properly. In the meantime, remember this opening published with those requirements from 2003 when reading the details described in this document:

*Vagueness is common when discussing hybrids. Some people are inadvertently vague by forgetting to include vital details, giving a misleading impression. Some people are intentionally vague to deceive, making hybrids seem less appealing. The following was created to eliminate the vague. It provides a list of realistic expectations from the hybrid technology now becoming available.*

*Read through the details. Make note of the benefits you'll gain from a hybrid like the 2004 Prius. Consider them the requirements when making your next vehicle purchase.*

## Size

### *Midsized Car*

Large enough for a family without being excessive has always been the target to serve the biggest group of consumers. High volume production is the key to profitability and sustained sales. Midsized is the category which fulfills this requirement. Prius and Camry-Hybrid are examples of vehicles that size. Without plans to offer a hybrid of this size, automakers will miss a major opportunity.

## Speed

### *0-60 in less than 11 seconds*

Even before 2003, it was a well proven fact that acceleration speed of 12.5 from zero to 60 MPH was the fastest required for everyday travel. Taking less time would be enough to satisfy any of the naysayers. Unfortunately, the obsession with increasingly faster speed over time has well exceeded the need. The want for more doesn't serve any practice purpose. Perhaps it's a final desperate attempt to keep traditional vehicles appealing, since meeting this requirement is easy for hybrids.

## Cost

### *less than \$3,000 more than traditional*

With the price of gas fluctuating between \$1.50 and \$4.00 per gallon, calculating benefit from hybrid efficiency can be quite a challenge. Determining monetary value for the reduced smog & carbon emissions is even harder. Consumers are left with the chore of judgment based on their own personal criteria of worth. Being prepared for high gas prices, doing your part to help ease oil dependency, and having less of an environmental impact is encouragement for automakers to provide ample supply of hybrid vehicles... which contributes to lower prices from high-volume production. Ultimately, that required \$3,000 difference should be recognized as realistic.

## Efficiency

### *double to a same interior-size traditional*

Basing this requirement on similar sized vehicles available in 2003, the real-world average of 48 MPG for the Iconic Prius makes qualification of the new model difficult to argue. Double is indeed realistic. For drivers with demanding needs, such as greater size (interior space) or power (trailer towing), significant efficiency improvement is still delivered. Enough? You be the judge, also taking the other requirements into account when considering the differences between traditional vehicles and hybrids.

## Clean

### *SULEV*

Measure of this requirement is simple. The emission rating of the vehicle clearly identifies the impact it will have on the air we breathe. SULEV is the rating which is the first in the category of being significantly cleaner than the majority. PZEV is even better, taking into account evaporative emissions in addition to those that are emitted from the tailpipe.

## Handling

### *similar to a same interior-size traditional*

In Prius, the battery-pack is only 99 pounds, the engine is smaller than what you would find in similar sized traditional vehicles (offsetting the motors), and the tires are ordinary. There really isn't much to differentiate it. The hybrid driving experience is typical. Comparison of hybrid and traditional sharing the same body, like Camry, doesn't reveal any standout difference. Handling (how the vehicle reacts to turns, swerves, braking) is much like other family cars. The requirement is not an issue. It is similar.

## Safety

### *similar to a same interior-size traditional*

It doesn't take much to confirm that hybrid safety isn't any different from traditional vehicles. Crumple zones are provided, just like front & side airbags, along with side-curtains. ABS (Anti-Lock Braking System) and TC (Traction-Control) are often standard features. VSC (Vehicle Stability Control) and HID (High Intensity Discharge) are available as options on some too. Also, the design includes electrical-cut, which works just like fuel-cut when an accident occurs. Special hybrids, like Prius, additionally include a bladder in the fuel tank to prevent evaporative emissions; this feature with an environmental purpose could serve as a safety benefit in the event of an accident. The required safety is provided.

## Color

### *a variety to choose from*

Remember this famous comment 100 years ago: “*You can have any color as long as it's black.*” Whether or not that was actually said doesn't really matter. The point is consumers should have a selection available to choose from. Great engineering is not enough. Even cosmetics should be taken into consideration. That's why it is so important for large volumes to be produced. People like to be expressive. Color offsets other visual variations they may not particularly care for and makes some vehicles of the very same model stand out more than others. Vehicles are a balance of needs & wants. Requiring that choice is important.

## Included Features

### *no sacrifices*

A vehicle stripped of features doesn't appeal to a large consumer base. Economy cars of the past excluded features we now expect as standard, such as A/C, an automatic transmission, power locks & windows, a CD player, and cruise-control. Not getting them reduces price, but also reduces the appeal. And since the hybrid system is newer technology, doesn't it make sense to also include other newer technologies? Shouldn't keyless entry & start with a wireless FOB be included? What about access for your phone and portable audio device? Ask yourself what constitutes sacrifice when it comes to vehicles that will be populating roads for many years to come. The answer may be subjective, but not even asking the question invites shortcoming. Require it be asked.

## Optional Features

### *lots of goodies*

To appeal to the pioneer spirit of those who embrace change, doesn't it make sense to also offer options that step well beyond convenience? In other words, there are some features that don't qualify as creature-comforts which could help to spread the acceptance of hybrids. They contribute to higher resale value years later too. What 2009 will introduce as “goodies” is a curiosity of many enthusiasts. With emissions & efficiency well addressed by the propulsion system, introduction of options new to the automotive industry via hybrids seems a sensible decision. It's not required, but some of those consumers are very receptive to trying new things. So, why not?

## Extras

### *stuff you also get at no additional cost*

Ever notice the Multi-Display and Digital-Speedometer in Prius? Those devices are driver interface upgrades not commonly accounted for when discussing the merits of that particular hybrid. They are extras included in the base price... something traditional vehicles and some other hybrids don't include. How much are they worth? Shouldn't they be a requirement if there's even a remote benefit to efficiency? Seeing information about consumption and the factors which contribute as you drive can be quite enlightening.