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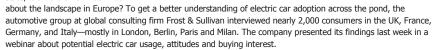
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European Consumers See Barriers to Electric Cars

PUBLISHED OCTOBER 13, 2009

Renault-Nissan CEO Carlos Ghosn believes battery-powered cars will make up 10 percent of global new car sales by 2020. Most mainstream market analysts are projecting numbers closer to 1 or 2 percent at best. But across the board, executives and observers believe that early adopters will come from very specific markets rather than broadly across all of the United States and Europe.

California, by far the biggest hybrid state, is a no-brainer. But what



"The Frankfurt Motor Show in September 2009 showed real evidence that the automotive industry has made firm commitments towards electric vehicles, however consumers see major barriers to adoption with factors such as infrastructure and range," said Frost and Sullivan auto industry manager Catherine Butterworth. "By understanding the voice of the consumer, the automotive industry can ensure that they are in prime position to take full advantage of this exciting new market."

Frost and Sullivan's high-level findings provided few surprises:

The high price of the initial electric vehicles will be an inhibiting factor for adoption. Proving that an electric vehicle is far more economical than a small engine vehicle and educating consumers will be very important.

Consumers, on average, are willing to pay almost \$29,000 for electric cars. Targeting households with incomes above \$100,000 will maximize adoption.

Households will accept 4 hours or more to charge the vehicle and were less interested in speeding the process up if it was more expensive.

Women showed a greater dislike for the inconvenience of charging and monitoring charge of electric vehicles.

Electric cars with driving range above 100 miles will help to break the psychological barrier to adoption.

As usual, the devil is in the details. The survey results showed that more than 1 in 10 consumers in Europe are willing to consider electric vehicles for next vehicle purchase. In aggregate, adopters of electric cars are likely to be from France or the UK, aged 26-35 or older than 55, male, and have high disposable income.

Frost and Sullivan determined that the UK represents the largest potential market—but also indicated that UK drivers have the least access to electricity at home or work.

Respondents were twice as likely to buy a plug-in hybrid (or "extended range electric vehicle") than a small electric car with a range of approximately 50 miles.



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Lost Prius to wife says: 16 hours ago

It has always been my contention that any electric car needs a greater than 100 mile range so one does not have to charge every single day. And I still content that they will be the most useful for work commuting and can be made the cheapest if they are not forced to meet the needs of the long distance traveling hybrids. Ideally, one would have a cheap 100+ mile EV for the work commute and a 50+ mpg hybrid (rental?) of some sort for trips over 400 miles.

"Women showed a greater dislike for the inconvenience of charging and monitoring charge of electric vehicles."

And my wife falls into that same category as the others for plugging in. She hates to have to unplug the block heater and close the hood on our Prius. Plugging in the block heater on cold days (that part I do) gains about an extra seven miles for the first five minutes of use and helps for the heater to produce heat quicker. Even these conveniences are not enough to balance out the inconveniences of unplugging the block heater and closing the hood for her.

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alancamp says:

I think until there is a 'comfort' level with going all electric, most people will want to keep their petro vehicle that may be paid for as a back up, and buy a second electric car for commuting and longer trips.

However, a plug in hybrid that gets at least 50 miles per charge may take care of both concerns. It's either plug in the car and pay .10 cents for electricity, or fill up the petro tank for \$30.00.

Anything less and going electric or hybrid would not be worth the effort.

My guess is that more small to medium sized cars will be the electric purchase as a second car, but more med to full size cars will be the plug in hybrid choice which would be the replacement.

I could go either direction, depending on what product is available when it's time to make the purchase. But I can't wait to make the move away from petro.

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Fred Linn says: 14 hours ago

-----"But I can't wait to make the move away from petro."----

If that is the object, then get a diesel/natural gas bi-fuel engine vehicle.

ULSD(ultra low sulphur diesel) the only diesel fuel on sale now is B5 biodiesel. Diesels can use any mix of biofuel, up to and including B100(100% bio)---that is what Rudolf Diesel first designed his engine for, the first one ran on peanut oil. The new Clean Diesels using ULSD are squeaky clean to run. Natural gas powered vehicles have been used for years in environments where low emissions are critical, forklifts in warehouses, mines, tunnels etc.

Diesels are already high compression/high efficiency engines. They get similar efficiency range to hybrids---without the use of expensive batteries and complex drive systems. The more parts----the more chances of that something will break. Truck diesels routinely run 500,000 miles or more before overhaul.

Bi-fuel has been around for years in cold climates where liquid fuels can be a problem with gelling, and starting. Since natural gas is already a gas---there is no problem with starting or gelling in cold weather. Simply start the engine on NG and run till the engine is warm---the switch to liquid fuel if needed.

Bi-fuel engines mean no problem with supply, storage, distribution and availability. Most homes and service stations are connected to natural gas through utility hook ups now. On the road—if you can't find natural gas available, use liquid fuel. The engine will run fine with no difference in performance on either one.

Methane can be made from biological sources such as sewage, and landfill waste. Biomethane is exactly the same as fossil methane—it can be mixed in any proportion with no loss of performance. The addition of just 6% biomethane to fossil methane will result in greenhouse nuetral emissions. Any mix greater than 6% biomethane means you are actually lowering greenhouse effects on the atmosphere compared to doing nothing.

Diesel engines are powerful for their size. VW Jetta gets high mileage competitive with Prius---but the Jetta has 140 hp compared to 98 for the Prius.

Using a diesel/natural gas bi-fuel engine vehicle, using B100 biodiesel and natural gas in any mix of modes, means that you can drive as far as you every want, never have to recharge any batteries, and you can drive completely petroleum free.

Using Flex Fuel/natural gas engined vehicle would depend the mix of how much NG to liquid fuel driving you do. Assuming you drive 50% liquid and 50% NG, using E85(85% ethanol)—you'd use only 7.5% of the petroleum you otherwise would. If you drive 100% of the time on NG, you'd use no petroleum at all, but would still be able to use gasoline if you got stranded with no NG available. Just flip the switch on the dashboard to liquid fuel use. The Flex Fuel engine would run the same on either gasoline or E85.

Flex Fuel engine vehicles would sacrifice the inherent efficiency of diesel, but the cost of running with natural gas would make that a moot issue—most drivers would opt to run natural gas as much as possible. Natural gas is cheaper to run than either petroleum or electricity. No one heats their home or hot water with electric if natural gas is available.

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veek says: 9 hours ago

Note to Lost Prius to Wife:

I have had several cars with block heaters and each could be plugged in with the hood closed; you can extend the cord to the front of the car and fasten the connector plug so it hangs outside an inch or two (yeah, it looks a bit dorky, for what it matters). Any good garage or RV service center should be able to do this for you. Your wife should love this!

You might even be able to fit in an internal low-voltage electric blanket-type warmer for the hybrid battery, too, although i would check with the dealer about this just to be safe.

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Dave K. says: 2 hours ago

My wisecrack to "I don't want to plug it in" is "So you would rather stand out in the rain and handle flamable carcinogens?". I guess the devil you know is better than the devil you don't.

Put the cars on the road and people will figure out that they want them, word of mouth will take care of it.

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Lost Prius to wife says:

veek, unfortunately my wife has been spoiled by Toyota's "thoughtfulness" of keyless entry. That and the way women think differently than men.

With one's key in the pocket, one just has to walk up to the locked Prius, open the door by just grabbing the door handle and pulling it, climb into the seat and put the seatbelt on, and press the power button and go. No fumbling for the key, no need to press any buttons on the key. Very efficient and convenient. And now one has to pull a plug apart?

It is my observation that many women like everything to be efficient and convenient while men are more willing to put up with minor inconveniences. For my wife, it would be better if she could pull up to a rack that would automatically plug the car in as the car pulled up to the rack's stop, and then would automatically unplug the car when she would back the car out of the garage.

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