

Consumers Are Confused About Choices for Fuel-Efficient Vehicles

MILWAUKEE – Despite uncertainty regarding prices at the pump, Americans are resisting a move to more fuel-efficient hybrid vehicles largely because of confusion over the differences between these types of cars.

The findings from a recent survey, conducted by the Opinion Research Corporation and funded by Johnson Controls, suggest there is a clear gap between consumers' attitudes toward fuel-efficient cars and their actual purchase intent.

"It's clear that consumers are confused about their options for more fuel-efficient vehicles, despite their desire to save on fuel costs," said Alex Molinaroli, president of Power Solutions for Johnson Controls.

"These findings indicate U.S. drivers need to have a better understanding of the offerings available to them now, as well as options that will become available in the U.S. market. This includes Start-Stop technology which has been marketed in Europe in recent years and will be offered to the U.S. market in 2012."

Forty-five percent of those surveyed said there are too few options when it comes to hybrid vehicles, while 39 percent of those surveyed had no idea what the differences are between types of fuel-efficient vehicles such as

Start-Stop vehicles and hybrids. The findings reinforce the need for greater education about the full spectrum of vehicle technology options, as well as cost considerations both at purchase and over the lifetime of the vehicle.

The four main vehicle technology categories included in the survey were:

- Internal Combustion: Gasoline-powered internal combustion engines are expected to continue to become increasingly more fuel-efficient.

- Start-Stop: With minimal change to the vehicle system and a modest price premium, Start-Stop technology allows the engine to be turned off during stops such as traffic lights (similar to a feature of full hybrid vehicles) and automatically restart again when the driver engages the clutch or steps on the gas, thereby reducing emissions and providing fuel savings of 5-12 percent.

Widely used across Europe, vehicles with Start-Stop technology are slated to come to the U.S. market in 2012.

Of the car owners surveyed, 28 percent would consider purchasing a Start-Stop vehicle when shopping for a new car.

- Hybrid Electric Vehicle: By using two different sources of traction power (such as a

gasoline engine paired with a high-voltage battery), the technology maximizes the overall vehicle efficiency.

There are different degrees of hybrid functionality ranging from mild to full to plug-in, each with greater levels of fuel economy performance, ranging from 15-50 percent.

Nearly 40 percent of the drivers surveyed would consider purchasing a hybrid vehicle when shopping for a new car.

- Electric Vehicle (EV): All-electric driving requires an advanced lithium-ion battery with more energy and power. The potential fuel economy improvement of EVs is infinite. About 20 percent would consider purchasing an EV when shopping for a new car.

"We are ramping up our efforts to educate drivers about the spectrum of vehicle technologies available to consumers who want to improve fuel economy and decrease emissions in their vehicles," said Molinaroli.

"For example, we recently introduced a new on-line tool called My Demo Drive (<http://mydemodrivedrive.com/>) that allows consumers to virtually test-drive and compare fuel usage, CO2 emissions and travel costs among a vehicle with a standard internal combustion engine, a Start-Stop vehicle, and a hybrid electric

vehicle. With such tools, we are hoping to raise awareness about technology options and help drivers become better informed."

In addition to lack of understanding between fuel-efficient options, perception of price continues to be an issue. The data shows 75 percent of car owners would consider a more fuel-efficient vehicle when shopping for a new car.

However, only 20 percent of car owners are willing to consider actually purchasing a hybrid, Start-Stop, or electric vehicle at current gasoline prices hovering between \$3.50 and \$4.00 per gallon.

"Our findings show that consumers will really take action when gas hits somewhere between \$4 and \$5 a gallon," Molinaroli said.

"The bottom line is that these vehicles will take off when they make sense financially, likely the most quickly with Start-Stop and hybrid electric vehicles. Consumers do have options, they just are not aware or understand them. We're focused to help them gain that understanding."

Critics have said that fuel efficient cars have taken on a Not In My Backyard (NIMBY) aspect – it's okay for *you* to drive a small car, all to subsidize the low mileage in *my* SUV.



Chevrolet Malibu Seat Performance Engineer Daniel Cohen adjusts Oscar, General Motors' mannequin-like simulation tool used early in the product development process to provide key vehicle interior measurements at the General Motors Milford Proving Ground. The data generated by Oscar helps engineers and designers to create optimal interior space and comfort for vehicles like the new 2013 Malibu.

'Oscar' Aids GM in Designing, Building Car Interiors

DETROIT – The name "Oscar" may bring to mind a grouch, an award statuette, a former championship boxer or maybe even a hot dog. But for Chevrolet, Oscar plays a key role in the engineering and interior design of the all-new 2013 Malibu.

Oscar is GM's three-dimensional, mannequin-like simulation tool comfort engineers used early in the product development process of Malibu to determine the overall dimensional layout of the car's interior.

Before the interior was designed and engineered, Oscar first provided the key measurements Engineering and Design needed to create optimal interior space and comfort.

Technically known as a "Comfort Dimensioning System," Oscar is assembled in 18 removable parts weighing up to 170 lbs., and is made of steel, plastic and aluminum.

In the mid-1940s, Northrop used a similar device named Oscar Eightball. The 185-lb. aviation dummy was used for ejection seat and other testing.

GM patented a similar tool for optimal interior space and comfort testing.

Later on, the name was shortened to Oscar to differentiate the automotive from the aviation anthropomorphic test dummy.

Oscar is mechanically hinged at the hip or "H" point, which simulates the actual

pivot center of the human torso and thigh.

Based on the "H Point," engineers and interior designers determine the necessary headroom and the optimal back angle that should be offered.

All this data directly influences positioning of the steering wheel, the pedals, rearview mirrors, instrument panel and other driving controls to ensure that the Malibu provides maximum room and comfort for a broad spectrum of customers.

When it comes to leg length measurement, Oscar can be assembled to represent an average (172-pound) adult male (50th percentile), scaled up to a 95th percentile male (270 pounds), or reduced to a 5th percentile (108-pound) female.

A 95th percentile adult, for example, is larger than 95 per-

cent of the population, while a 5th percentile adult is smaller than 95 percent of the population.

"Oscar represents our consumers," said Malibu seat performance engineer Daniel Cohen.

"We use Oscar much like a builder uses a level to make sure that the building foundation is even. Oscar gives us a solid baseline around which we design and build new vehicles, like the Malibu."

The increasing size of the U.S. population since 1962, coupled with the growth in height and weight of consumers, make Oscar a valuable tool.

According to a National Health and Nutrition Examination Survey conducted in 2006, a 95th percentile adult male has grown from 6 feet 1 inch to 6 feet 2 inches since 1962 and from 217 to the cur-

rent 270 pounds. A 95th percentile adult female has grown from 5 feet 7 inches to 5 feet 8 inches since 1962 and from 199 to 250 pounds.

GM engineers designed and patented Oscar in 1961. The seat comfort tool was developed to "aid the designer of the automobile passenger compartment," according to a white paper presented by former GM engineers Vincent Kaptur, Jr. and Michael Myal at the 1961 SAE International Congress in Detroit.

Oscar was the key to a new dimensioning concept adopted for industry use by the Automobile Manufacturers' Association starting with 1963 models, and is now a required part of the design for Federal Motor Vehicle Safety Standards.

Human X-rays were used to help develop Oscar's shape and size.

Ford Continues to Push Wide Variety Of Recyclable Materials into Vehicles

DEARBORN – Ford and Recycled Polymeric Materials (RPM) have teamed up to deliver environmentally friendly gaskets and seals made from recycled tires and bio-renewable content such as soy.

More than 2.2 million pounds of rubber from recycled tires has been made into seals and gaskets and more than 210,000 used tires have been recycled. 150,000 pounds of soy has been used to create the materials.

The gaskets and seals are featured on 11 2011-model-year Ford Motor Company vehicles, including F-150, Escape, Mustang, Focus and Fiesta

Ford and supplier Recycled Polymeric Materials (RPM) have found a way to put discarded tires to good use. By combining recycled tires with bio-renewable content, they are delivering environmentally friendly seals and gaskets for Ford Motor Company vehicles.

The gaskets and seals are derived from 25 percent post-consumer particulate from recycled tires and 17 percent bio-renewable content from soy.

In total, more than 2.2 million pounds of rubber from re-

cycled tires has been made into RPM seals and gaskets and more than 210,000 used tires have been recycled. Additionally, 150,000 pounds of soy has been used to create the materials.

The seals also offer a weight savings, with more than 1,675 tons of weight removed from Ford vehicles on the road.

"When it comes to finding a way to use more renewable and recyclable content in our vehicles, Ford and our suppliers are looking at every part of a vehicle," said Dr. Cynthia Flanagan, technical leader, Research and Innovation.

"As long as an application makes sense and upholds strict quality standards, we'll look to get these sustainable materials inside our vehicles."

The sustainable gaskets were first introduced to Ford in 2008 and have now expanded to include 11 vehicles.

Ford Motor Company vehicles that feature the sustainable seals and gaskets include: Ford Escape; Ford F-150; Ford F-250; Ford F-350; Ford Fiesta; Ford Flex; Ford Focus; Ford Mustang; Ford Taurus; Ford Transit Connect; and Lincoln MKS.

Ford's "Reduce, reuse and recycle" commitment is part of the company's broader global sustainability strategy to reduce its environmental footprint while at the same time accelerating the development of advanced, fuel-efficient vehicle technologies around the world.

Over the past several years Ford has concentrated on increasing the use of recycled plastics and bio-based materials whenever possible, provided these materials are environmentally favorable and meet all durability and performance requirements. Examples include soy foam seat cushions, wheat straw-filled plastic, recycled resins for underbody systems, recycled yarns on seat covers and natural-fiber plastic for interior components.

"Our team continues to develop new technologies that reduce our environmental footprint," said Dr. Debbie Milewski, technical leader, Plastics.

"We have already been successful in incorporating soy foam seats on all North American vehicles and are actively expanding the research front into a variety of new plastics and rubber areas."

Dodge Juices Up 2012 Challenger SRT

AUBURN HILLS – For 2012, the Dodge Challenger SRT8 392 adds even more high-tech performance features to solidify its place as the brand's ultimate modern American rear-wheel-drive muscle coupe.

This 470-horsepower machine promises a balanced performance approach with outstanding straight-line acceleration, world-class ride and handling, high-performance braking and the most up-to-date technologies that deliver more driver excitement and control. And it still gets up to 23 miles per gallon on the highway.

The 2012 Dodge Challenger SRT8 392 accelerates from 0-60 mph in the high 4-second range; runs the quarter mile in mid-12-second range with

the automatic transmission (high 12-second range with the manual); goes from 0-100-0 mph in the low 15s, reaches a top speed of 182 mph with the manual transmission (175 mph with the automatic) and stops from 60-0 mph in just 117 feet.

The 392-cubic inch (6.4-liter) HEMI V-8 delivers 470 horsepower (351 kW) and 470 (637 N•m) lb.-ft. of torque.

The torque band is extremely flat allowing for strong standing starts and improved straight-line performance throughout the rpm range. An advanced active intake manifold along with high-lift cam with phasing provides maximum low-end torque and high-end power while still delivering up to 23 miles per gal-

lon on the highway with the standard manual transmission.

Standard Fuel Saver Technology (four cylinder mode) in automatic transmission equipped models allows the engine to operate economically on four cylinders or use the power of all eight cylinders when needed.

The EPA fuel economy miles per gallon (mpg) (City/Hwy) ratings for the 2012 Dodge Challenger SRT8 392 are 14/22 for automatic transmission models and 14/23 for manual-transmission models.

A look under the hood reveals unique valve covers with painted silver ribs and the "392 HEMI" logo, which gives it a cool look.

Car Colors Go Through Long Process Before 2015 Introduction

by Christine Snyder
Staff Reporter

It may not be the deciding factor when purchasing a new car, but choosing the color is certainly one of the most enjoyable.

But have you ever wondered how automakers choose the color palette for its products? It's a more involved process than you might think.

BASF Coatings, which supplies coatings and paints to most of the major automakers presented its color trend report July 19.

These colors are suggestions for the "2015ish" model years, said Zenon Paul Czornij, technical manager of BASF's Color Excellence Group at its show at the A. Alfred Taubman building in Detroit.

Czornij said the colors are the result of an international

brainstorming workshop.

"This is the first time we actually showed this as a global trend show with the same themes," said Czornij. "It's interesting because during the workshop we came together and brainstormed out what was important to our regions and found there was a lot of overlap."

The show is called "Come Closer" said Czornij, with three global themes and three distinct regional themes for exterior car colors.

"The reason we call it 'Come Closer' is we are trying to find more of what the individual is feeling and reacting and proactively doing in today's world," said Czornij. The global themes reflect environmentalism, technology connectivity, and economic uncertainty.

One of the color presentations for the North American region includes a new exterior

coating derived from pulverized recycled tires.

"We are showing our eco footprint here," said Czornij. "This is a marriage of color tradition and also gloss and also texture. We are bringing the elements of all three together now for exterior coating that was done in the past only in interior coatings."

BASF is also distinguishing itself in North America with low gloss and non-metallic colors.

"We think non-metallics in North America is something fresh and new because of the preponderance of metallics," said Czornij. "We can create beautiful colors without metallic."

Some of the color selections for North America included turquoises to reflect Native American influence and a deep metallic red which was previously unachievable without special paint technol-

ogy. There was also a bright saturated non-metallic red using new environmentally friendly paint technology.

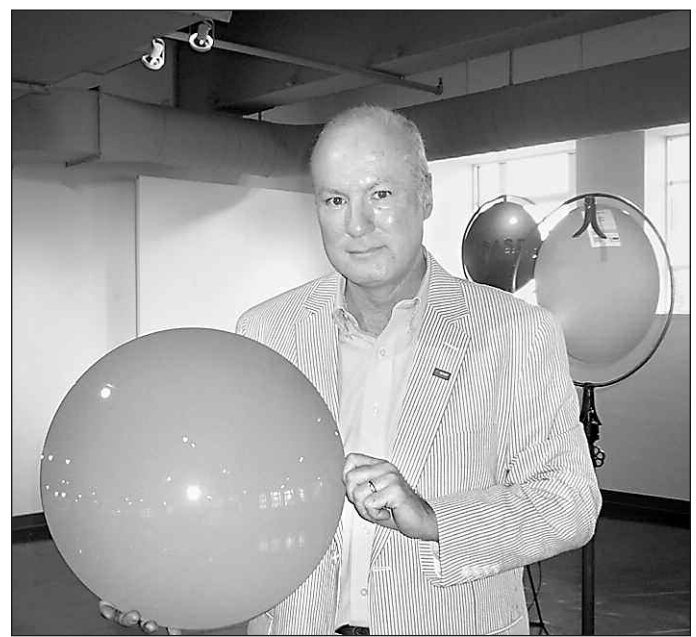
Green is an important color for North America, and Czornij showed off some greens that he believes evoke optimism.

"This is for the market for someone who wants an optimistic look. Maybe a small car, something with a lot of spunk," said Czornij.

BASF presents its color trends and then automakers do their own brainstorming, said Czornij. "They will select some (color) spaces from here and they will want us to move it in a certain direction," said Czornij.

"We have to make this as broad-based as possible for all vehicle lines and for all customer application conditions."

New color options, such as hot copper, continue to grow.



Zenon Paul Czornij of BASF's Color Excellence Group, shows off a sample for North American automotive customers' future vehicles. Turquoise is Native American influenced and speaks to heritage trends. Indulge the black and white photograph. How well could we have reproduced turquoise on newsprint anyway?