

By 2010, one in five vehicles in California will be an ultra-clean model.

Low-key cars have a clean-air secret

AUTOS VIRTUALLY AS GREEN AS HYBRIDS — AND THEY'RE EVERYWHERE

By Paul Rogers
Mercury News

Imagine cars so clean that their tailpipe emissions contain less pollution than the air around some California freeways.

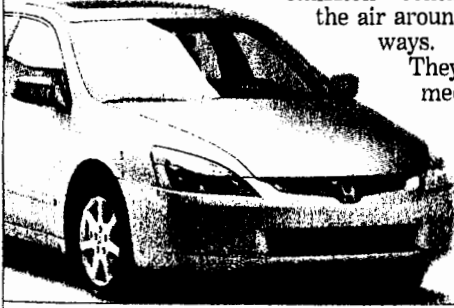
They're not hybrids, the media darlings of the environmentally correct.

Rather, they're clean air's best-kept secret: 31 familiar gas-burning 2004 models that have met a strict new Cali-

fornia pollution standard. The Honda Accord, Ford Focus, BMW 325i and Volkswagen Jetta are among the "PZEVs," which stands for "partial zero-emission vehicles."

Lost in the excitement over hybrid models like the Toyota Prius is an even greener trend sweeping California's automobile landscape — and soon the rest of the nation's. Tens of thousands of new cars that put out as little pollution as hybrids — and in some cases even less — are hitting the roads this year, often at a lower cost than hybrids.

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CARS | Cleaner models give hybrids a run for their money

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A decade ago, it was thought that the only way to meet the nation's clean-air goals was to phase out gasoline-burning engines — and some purists still think so. But PZEVs are so clean that it takes 590 of them to put out the tailpipe hydrocarbon emissions of one standard 1970s car. So even as the population grows, the air will continue to get cleaner as more motorists send old cars to the junkyard and purchase new PZEVs.

Reducing pollution

"These cars are going to be one of our most important tools for reducing air pollution," said Jerry Martin, spokesman for the California Air Resources Board.

"Hybrids have gotten a lot of attention, but PZEVs are available now in very large numbers, and they are everyday cars. If you look out your window, you'll see two or three at the stoplight."

The cars are cleaner because they have a repositioned and more efficient catalytic converter, different tuning and a more leakproof fuel system.

By the end of this year, the air board estimates, there will be 140,000 PZEVs on California roads, growing to 4 million by 2010. That's roughly one in five vehicles. By comparison, at the end of last year, there were only a few hundred electric cars in California, and only about 43,000 registrations nationwide for hybrid vehicles.

Other states, including New York, Massachusetts and Vermont, have copied California's emissions rules, sending PZEVs onto the roads there.

"PZEVs are potentially more significant than hybrids simply because of the number of them that will be on the road. Already there are more of them on the road than all the hybrids," said Jim Motavelli, editor of *E* magazine and the book "Forward Drive: The Race to Build the Clean Car of the Future."

Compared with the basic standards for most cars sold in California, PZEVs put out 90 percent less hydrocarbons, nitrogen oxides and carbon monoxide. They have zero evaporative emissions, the fumes that seep from auto engines and cause smog.

California auto-pollution standards

California has the strictest air-pollution standards for new vehicles in the United States. When automakers sell hybrids or very clean gasoline-burning cars, they earn credits toward their requirement to make a small percentage of zero-emission vehicles. The categories:

LEV: Low Emission Vehicles. The basic, least stringent emission standard for all new cars sold in California in 2004 and beyond.*

ULEV: Ultra Low Emission Vehicles are 50 percent cleaner than the average new 2004 model year vehicle.

SULEV: Super Ultra Low Emission Vehicles are 90 percent cleaner than the average new 2004 model year vehicle.

PZEV: Partial Zero Emission Vehicles meet SULEV tailpipe emission standards, have a 15-year or 150,000-mile warranty on some parts and have zero evaporative emissions. More than 30 models now meet this standard, including some Ford Focus, Honda Accord and BMW 325i models.

AT PZEV: Advanced Technology PZEVs. These are hybrids or compressed natural gas vehicles that meet PZEV emission standards. Examples include the Toyota Prius, Honda Civic Hybrid and Honda Insight.

ZEV: Zero Emission Vehicles have zero tailpipe emissions. They include electric cars and fuel cell cars. Because of high cost and technology challenges, very few exist.

*Pickup trucks, SUVs and vans have until 2008 to comply with the passenger car standards.

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2004 cars that meet the PZEV standard

BMW
■ 325Ci Coupe
■ 325i Sedan and Sports Wagon

Daimler Chrysler Sebring
■ Sedan

Dodge Stratus
■ Sedan SXT

Ford Focus
■ LX and SE sedans, SE Wagon
■ ZTS Sedan
■ ZTW Wagon
■ ZX3 and ZX5

Hyundai Elantra
■ GLS 2.0L

Honda Accord
■ LX and EX sedans

Mazda
■ Mazda3

Source: California Air Resources Board

Mitsubishi Galant
■ DE and ES 2.4L

Nissan
■ Altima 2.5, 2.5S and 2.5SL
■ Sentra 1.8 and 1.8S

Subaru Legacy
■ 2.5 GT Sedan and Wagon
■ L Sedan and Wagon/35th Anniversary Edition
■ Outback Limited Sedan and Wagon

Toyota Camry
■ LE, SE and XLE

Volkswagen Jetta
■ GL and GLS 2.0L sedans

Volvo
■ 2.4 S60 Sedan
■ 2.4 V70 Wagon

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Lower emissions




This year's cars emit only a fraction of the pollutants that cars did several decades ago. Here are comparisons of three types of pollutants, measured in grams emitted per mile of driving:

- CO: Carbon monoxide
- HC: Hydrocarbons
- NOx: Nitrogen oxides

1965 typical sedan

CO  87
HC  8.8
NOx  3.6

1970s average car

CO  40
HC  5.9
NOx  2.4

2004

be solved as long as the internal-combustion engine is still around.

"Extremely clean gasoline vehicles are helpful, but we don't believe we can reach clean-air goals without some vehicles that don't run on gasoline," said Bonnie Holmes-Gen, an assistant vice president for the American Lung Association in Sacramento.

Also, they note, because hybrids get better gas mileage, they emit less carbon dioxide, which contributes to global warming.

"Hybrids are our preferred choice," said Holmes-Gen. "But if you can't buy a hybrid, look at a PZEV. They are more economical and they are extremely clean."

Look again

The new cars leading the clean-air trend are so anonymous that thousands of people buying them — from the Subaru Legacy to the Toyota Camry — don't even realize they are driving some of the cleanest vehicles ever made.

Ford is advertising that its Focus, with a 145-horsepower, 2.3-liter engine, meets the PZEV standard.

Yet most other automakers whose models have met the California PZEV standard have said nothing in print, radio or TV ads, because their campaigns are designed for a national audience. The media have been fixated on hybrids. And environmentalists have spent their energy pushing for hybrids and hydrogen-fuel-cell cars that may be a decade or more away.

"The factories aren't advertising it," Jim Fink, sales manager at Al Sanchez VW in Gilroy, which sells the PZEV Jetta. "It's not as important to people as gas mileage. We're getting lots of SUVs traded in right now. That seems to be the main factor, more than emissions."

PZEVs look like any other car and cost only about \$100 more than less-clean versions of the same model. And some models are considerably cheaper than hybrids. While a standard 2004 Toyota Prius costs \$20,510, a Ford Focus PZEV costs only \$13,370.

"You can have bragging rights on a hybrid because it is plainly a hybrid," Motavelli said. "Most PZEVs aren't marked PZEV, so nobody knows you have an environmentally correct car."

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And they must have a 15-year or 150,000-mile warranty for the emissions systems to qualify for the PZEV standard, so owners have an incentive to maintain them.

Worldwide vision

"This technology that was developed for California is going to find its way throughout the world," eventually cleaning up smoggy cities in India, China and Mexico, said Joe Norbeck, director of the University of California-Riverside Center for Environmental Research and Technology.

"With PZEVs, the light-duty-vehicle problem has pretty much been solved. Their emissions are almost below detection level."

Not all environmental and public-health groups are cheering.

The PZEV standard came

LEV (average new car)

CO **3.4**

HC **0.075**

NOx **0.2**

PZEV

CO **1**

HC **0.01**

NOx **0.02**

Source: California Air Resources Board

out of California's 13-year effort to force automakers to build electric cars. But because of low range — most electric cars can go only 100 miles before requiring recharging — and high cost, electric vehicles failed to catch on, and last year the state finally dropped its mandates.

Instead, the air board allowed carmakers to receive credits for electric cars if they

built hybrids or super-clean gas vehicles like PZEVs.

UC-Riverside completed a study last fall that found even Southern California can meet federal health standards for clean air without an electric-car mandate as long as enough PZEVs are sold.

Some environmentalists say the auto industry gave up too easily on electric cars. And they aren't ready to concede that smog problems can

A few drivers are noticing.

Engine power

Jason Chan of Fremont, a 19-year-old computer student at Mission College, got a 2003 Ford Focus, one of the first cars to meet the PZEV standard, last May.

"I knew it was a PZEV," he said. "I knew what that meant. To be honest, I was afraid it might compromise the power. But my car actually has more torque and power than older-model Focuses. I'm surprised they could do it."

Chan said his car leaves his friends' vehicles in the dust.

"I'm amazed at how well this engine performs. And how it can be, so clean," he said. "I love this car."

Contact Paul Rogers at progers@mercurynews.com or (408) 920-6045.

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