

[Wednesday, June 9, Modesto Bee](#)

### **Spare the Air campaign underway**

[By KRISTINA SEWARD - BEE STAFF WRITER](#)

Escaping the sweltering valley heat by cruising in your air-conditioned car may seem like a good idea, but driving during summer months is more damaging to the air than motorists may realize.

Encouraging people to drive less by carpooling and combining errands into one trip are just a few ways the 2004 Spare the Air campaign is attempting to reduce summertime smog. The effort was launched Tuesday by the San Joaquin Valley Air Pollution Control District.

"Almost everyone can do at least one thing," air district spokesman Anthony Presto said. "And if everyone did, the impact would be enormous."

Presto said smog is easily trapped in the valley because it's almost completely surrounded by mountains and there's very little wind.

"There's no place for pollution to go, and we keep adding to it," Presto said.

Nationwide, the San Joaquin Valley is second only to Los Angeles in poor air quality.

Presto said the main target of Spare the Air season is ground-level ozone, the main pollutant in smog. He said ozone is a corrosive gas that damages lung tissue.

During the season, which lasts from June through September, the air district expects to designate 25 to 30 Spare the Air days, days the public is advised that air quality levels will be healthy.

"The hotter it gets, the worse the air quality," Presto said.

While the average healthy person is still at risk on Spare the Air days, Presto said children, elderly people and people with respiratory illnesses such as asthma or emphysema should be especially cautious.

"People who are sensitive should limit their outdoor activity on Spare the Air days," he said.

Jacki White of Modesto is aware of Spare the Air season, but said she feels like there's little she can do to contribute.

White said she looked into riding the bus to her job in downtown Modesto, but its schedule would not get her to work on time.

However, she said during the summer she does try to drive her car and mow her lawn less.

Valley businesses are also getting involved by teaming up with the Valley Air District as Spare the Air Employer Partners. This year, the district has about 750 Employer Partners who provide employees with information about reducing pollution.

"We need everyone's cooperation to reduce levels of ozone pollution," Presto said. "It's everybody's problem. It's everybody's responsibility."

Air-quality reports and Spare the Air forecasts are available daily in The Bee, at [www.valleyair.org](http://www.valleyair.org) and by calling 800-766-4463.

For more information on becoming a Spare the Air Employer Partner, visit the district's Web site or call 559-230-5853.

[Wednesday, June 9, 2004, Visalia Times-Delta](#)

### **Air board wants you to join war against smog**

By Percy Ednalino  
Staff writer

It's still several days before summer's official start, but the San Joaquin Valley Air Pollution Control District has already renewed its battle with summertime smog.

Tuesday marked the start of the Air Board's "Spare the Air" season. Until Sept. 30, the district will announce Spare the Air days when ozone is expected to be at unhealthy levels.

Janelle Schneider, the air district's public education representative, said Spare the Air was originally an educational program.

"The intention was to raise the public's awareness as to the causes of summertime smog, when the air quality is forecast to be in unhealthy levels," she said.

Spare the Air days are called when the air quality index is forecast to be in the unhealthy range, at 151 or above.

The air district usually announces between 25 and 30 Spare the Air days during the season. Schneider said 39 Spare the Air days were announced in Tulare County last summer. She also said the majority of Spare the Air days are regularly announced in August and September.

"Right now, the air quality is good," Schneider said. "We're not looking at any Spare the Air days this week, but they'll start popping up, I'm sure."

Schneider said ozone is the main air pollutant during the summer months. During the winter, when the district announces mandatory no-burn days, the main pollutants are particulates from wood-burning fireplaces, stoves and other sources.

During Spare the Air days, people are encouraged to take steps to reduce air pollution. The majority of summer smog is the result of vehicle use, Schneider said. To cut down on smog, the district suggests people carpool or take public transportation.

"The less we drive, the less ozone we create," Schneider said.

Schneider said the district also suggests people take other steps, such as using briquette starters instead of lighter fluid when barbecuing.

The district's Web site, [www.valleyair.org](http://www.valleyair.org) <<http://www.valleyair.org>> has a list of tips to reduce smog and announcements of Spare the Air days. Valley residents also can call (800) 766-4463 to check the air status.

Wednesday, June 9, Los Angeles Times

## **Hydrogen Car Buyers Out of Their Element?**

**Fueling the \$150,000 Shelby Cobra will be tough with only 13 stations in the state.**

By John O'Dell, Times Staff Writer

So, where do you fill up a \$150,000 hydrogen-fueled sports car?

The question is relevant starting today, when the two-seat Hydrogen Shelby Cobra - built by auto legend Carroll Shelby - can be ordered from Hydrogen Car Co., a 9-month-old Los Angeles company.

The Cobra's internal combustion V-8 engine burns hydrogen, making it cleaner and more fuel-efficient than any of its gasoline-gulping Shelby siblings. The difficulty with answering the question is that hydrogen filling stations are hardly on every corner.

In California, there are just 13 of them. Operating one requires special training and attention to safety concerns. Only three stations in Southern California are open to the public: one in Diamond Bar and two in the Coachella Valley. A fourth, under construction at Los Angeles International Airport, is expected to open in the fall.

Gov. Arnold Schwarzenegger wants to see hydrogen stations at 20-mile intervals along California's major freeways by 2010, although there's no money behind his dream. There's a federal program aimed at opening at least 24 hydrogen stations in the state, but nobody in Washington has set a date for construction to start.

That makes for slim pickings if you want to take the Cobra for a long drive.

It packs the equivalent of 4 gallons of gas in its special pressurized fuel tank. Even though it can get upward of 25 miles to the gallon, it can travel only about 100 miles before needing a fill-up.

That's not too steep a price to pay, says Hydrogen Car's chairman, S. David Freeman. If enough hydrogen cars are sold to powerful people, perhaps political pressure for hydrogen fueling stations will grow, he said.

Freeman, 78, who once ran the Los Angeles Department of Water and Power and helped start Hydrogen Car, said the first Shelbys could be delivered in six months. He said one of the company's missions was to speed the much-hyped anti-gasoline revolution by getting hydrogen-powered cars on streets now, instead of waiting for fuel-cell-powered electric vehicles to be perfected.

Prices for the Shelby cars will vary from \$149,000 to \$175,000 for a top-of-the-line model rated at 400 horsepower.

"Carroll has assured us that there are people out there who will buy any car he makes, even if it runs on hot air," Freeman said.

Shelby, 81, is an automotive icon. His 1960s-era Shelby Mustangs were classic muscle cars that are now treasured collection pieces. (He's building the classic Cobra again at Shelby Automobiles in Las Vegas. The cars sell for \$80,000 on up.)

The Hydrogen Shelby Cobra deal Freeman and partners Ari Swiller and Cole Frates signed with Shelby calls for him to convert standard Cobra engines from gas to hydrogen power. The cars will be assembled at Shelby's engine plant in Gardena.

"If we can start hydrogen off with the most exciting cars on the road, and then move into the sport utility vehicles and pickup trucks ... then maybe we can disconnect people from the image of these kinds of cars as too small and limited," Freeman said.

That is "a welcome development," but not crucial to the future of a hydrogen-fueled transportation system, said Aaron Rachlin, manager of clean fuels for Praxair Inc., which is helping to develop the California hydrogen fueling infrastructure slowly being built with government and private funding.

[Wednesday, June 9, 2004, Bakersfield Californian](#)

### **Farmers dust off conservation skills**

By MARYLEE SHRIDER , Californian staff writer

Kern farmers required to implement emission-control plans on their farms by July 1 say the new rules will serve to document ongoing conservation efforts.

About 200 local growers packed the Kern Ag Pavilion Tuesday for help crafting management plans for each crop they farm, a requirement of new San Joaquin Valley Air Pollution Control District laws governing on-farm emissions.

Loron Hodge, Kern County Farm Bureau executive director, said local farmers began integrating many of the approved emission-control practices in their farming operations long ago, but were never given credit for it.

"Dust can be a detriment to a grower, can cut down on yields and cause fungus," Hodge said. "Farmers control dust any way they can, but never made a record of it."

Now they will. All ag producers with 100 contiguous acres or more are now required to implement and file a conservation management practices plan.

Dust control practices must be in place by July 1 and a conservation plan must be filed with the air district by Dec. 31.

Hodge said the plans will serve as a base of information for the air district and prove that the ag industry is not the polluting culprit it's often made out to be.

"We know we can do better, but you can't do what we do without making a little dust," he said.

Officials with the USDA's Natural Resources Conservation Service and the air district were on hand at the workshop to walk growers through the necessary paperwork.

Growers who submit their plans for review to the conservation service prior to submission to the air district save half of the application fees -- \$120 to \$550 depending on the size of the farm. Plans can include rotating tillage, watering or paving dirt roads and night farming.

Rick McVaigh, permit services manager for the air district, said farmers and conservation officials are working cooperatively to complete the process. Tuesday's workshop, he said, was the 26th held in the Central Valley, with more than 1,000 farmers already submitting completed plans.

The air district estimates some 6,000 Central California farmers will be required to have plans.

Steve Maniaci, operations manager of Sunridge Nurseries, said growers are willing to do their part in cutting emissions, but the new laws mean greater costs and greater responsibilities.

"Some of our perimeter roads are shared and we have oil leases," Maniaci said. "When we post speed limits it's our responsibility to make sure everyone respects those limits."

Rosedale grower Rick Jelmini said most farmers would prefer conservation measures like chipping over burning and electric power or diesel fuel if it were economical to do so.

"Motors are a pain, with upkeep and all, but with electricity so high, farmers look for less expensive alternatives," he said.

Jelmini said he will make the switch from ag burning to chipping and shredding within the year. Regardless of the costs, he said, the rules are in place and growers are doing their best to comply.

"The fighting is over and this was all settled over a year ago," he said. "We need to get this done so we can go back to work."

### [Wednesday, June 9, Orange County Register](#)

#### **Satellite to study the ozone layers**

**By JEREMY LOVELL**, Reuters

LONDON - A new satellite blasts off this month with the dual goals of gaining key information on the Earth's ozone layers and creating a blueprint for the search for other life-bearing planets, scientists said Tuesday.

The launch of the Aura satellite from the Vandenberg Air Force Base in California already has been delayed from June 19 because of technical problems, but a new date tentatively is set for June 26.

"This will allow us to probe the earth's planetary system and how it operates as a whole," NASA Earth Sciences official Ghassem Asrar told reporters at a news conference in London.

"The knowledge we gain will help inform our discussions on what to look for through the rest of the galaxy as we probe for life on other planets," he added.

Once orbiting the Earth, Aura - carrying experiments from British, Dutch and Finnish scientists as well as teams from the United States, all under the guidance of NASA - will join an array of other satellites monitoring the atmosphere.

Built to monitor earth, air and sea, the chain of satellites is the latest bid to understand the causes and consequences of climate change - branded earlier this year by Britain's chief scientist David King a bigger threat than terrorism.

In particular it will look at the relationship between ozone in the lower atmosphere, which is harmful to life and is largely caused by man-made chemicals, and ozone in the upper atmosphere, which protects against the sun's ultraviolet rays and which is destroyed by man-made chemicals.

[Wednesday, June 9, Tri-Valley Herald](#)

### **Valley air officials fume over trucks**

By FROM WIRE REPORTS

SACRAMENTO -- Central Valley air officials and environmental advocates come together in their outrage for the Supreme Court's decision to allow Mexican trucks to operate in the United States.

They said the last thing the Valley needs after its air pollution problem was classified as "extreme" is a fleet of unregulated Mexican trucks going up and down Interstate 5 and Highway 99 -- which the court's decision on Monday would allow.

"Ouch," said Kevin Hall, the Sierra Club's air quality chairman in Fresno. "And you can spell that with capital letters."

Mexican trucks have little if any of the smog-control equipment required on California-based trucks, and fuel sold in Mexico does not have to meet state or federal clean-air standards.

The impact of Mexican trucks on local air pollution is expected to be significant, but hard to predict, said officials at the San Joaquin Valley Air Pollution Control District.

"We do know that it would increase emissions because of the projection of the Mexican trucks to be so much dirtier over time," said Scott Nester, planning manager at the air district.

He said that if one-fourth of the truck traffic in the valley in 2020 is from Mexico, emissions of oxides of nitrogen, a key pollutant, would increase by 4 percent.

Two months ago, the Central Valley's air quality problem was classified as "extreme" -- the worst possible -- by the U.S. Environmental Protection Agency.

[Wednesday, June 8, Hanford Sentinel](#)

### **Meeting will assist farmers with dust compliance**

By Sentinel Staff

HANFORD - Farmers grappling with controlling dust can receive planning assistance at an air quality compliance meeting this week.

The meeting, set for 8 a.m. Thursday at the Kings County Fairgrounds, will offer local farmers a chance to learn ways to comply with federal clean air standards.

The San Joaquin Valley Air Pollution Control District set tougher standards this year to show a five-percent reduction of calculated emissions that would eventually bring the area in compliance with the federal Clean Air Act.

All agriculture producers with 100 contiguous acres or more of land are required to implement and file a conservation management practices plan for each crop they farm. Dust control practices must be in place by July 1 and a conservation plan must be filed with the air district by

Dec. 31.

Growers can receive assistance from the U.S Department of Agriculture, Natural Resources Conservation Service, to select the best practices for their operation and on how to file a plan application with the air district.

Growers who submit their plan to the Natural Resources Conservation Service for verification of completeness will receive a 50 percent discount on the air district application fee, a savings of \$60 to \$275, depending on the size of the operation.

[Monday, June 7, Associated Press](#)

### **Technology measures corn's suitability for ethanol**

MELANIE S. WELTE, Associated Press Writer

Pioneer Hi-Bred International Inc. and the National Corn Growers Association have teamed up to measure the fermentation characteristics of corn, helping to identify varieties best for ethanol production.

Des Moines-based Pioneer, the world's largest seed corn company, and the corn growers group announced Monday that they have signed a letter of intent for Pioneer to donate the technology, giving the corn and ethanol industries a single standardized calibration.

"This is a tremendous gift that Pioneer has given the corn industry," said NCGA Corn Board member Bill Horan, of Rockwell City.

"It will be a useful tool for large and small companies to enter into a new market and breed corn to optimize that market. That benefits that corn company, it benefits the farmers and it benefits the ethanol plants and it benefits the consumer for cheaper fuel," he said.

Horan compared the effort to what the dairy industry did years ago -- instead of selling milk by the gallon or the pound, a better measure of milk's value is the butter fat content.

"This is a similar type of evolution selling corn," he said.

By increasing the suitability of the corn coming into ethanol plants for ethanol production, the plants can be run more efficiently, Horan said.

Pioneer will provide the NCGA, which is based in St. Louis, a royalty-free license to the company's technology and related data. The license would include rights to sublicense, and the NCGA would coordinate all activities related to establishing a single standard that is accurate and fair for corn growers and the ethanol industry.

Pioneer spokeswoman Diana Bridgewater said the dry-grind ethanol industry is rapidly expanding and providing a growing marketplace for U.S. corn growers and their products.

"Pioneer is very excited about working with NCGA to provide this technology. We feel accurate grain quality standards will benefit both growers and the ethanol industry," Bridgewater said.

Ethanol is used as a fuel additive to help reduce vehicle emissions.

Demand for the corn-based product has increased in recent years after a cheaper petroleum-based additive, methyl tertiary butyl ether, or MTBE was found to have contaminated groundwater in at least 28 states.

NCGA and Pioneer hope to announce the formal agreement in midsummer. Further program activities will be announced as they develop.

"We'd like to have six plants operating on this system this fall. Then move into many more plants after that," Horan said.

The National Corn Growers Association represents nearly 33,000 members, 25 affiliated state corn grower organizations and hundreds of thousands of growers who contribute to state checkoff programs.

Pioneer Hi-Bred, a subsidiary of DuPont, provides access to advanced plant genetics, crop protection solutions and quality crop systems to customers in nearly 70 countries.

[Saturday, June 5, 2004, Bakersfield Californian](#)

### **System slashes diesel emissions**

By MATT WEISER, Californian staff writer

From now on, when Tracy Gaudet parks his 18-wheeler in Bakersfield, he won't be idling his diesel engine to keep cool while waiting to pick up his next load.

Instead, he'll plug into IdleAir, a new system at Bruce's Truck Stop along Highway 58. A big yellow tube mounts in his truck window, allowing him to enjoy air conditioning, television, phone and Internet service in his truck cab -- all without running his engine.

The system saves Gaudet money -- about \$1 an hour, he figures, because he's not burning fuel.

More importantly for Bakersfield residents, it eliminates 34 hours' worth of diesel exhaust -- smog-causing fumes that Gaudet's truck would have otherwise pumped into the city's air to keep him comfortable during his legally required layover between loads.

Most truckers idle their engines during layovers to provide power for climate control, television and other amenities.

"You don't have to be a college professor to figure out what saves you money," said Gaudet, who delivered a load of canned seafood from his home in Windham, Maine, and returned with a load of California produce.

There are 101 IdleAir units at Bruce's Truck Stop, and 38 of them were recently installed using a \$266,000 grant from the San Joaquin Valley Air Pollution Control District.

The installation is part of a \$2 million air district program to install 225 IdleAir units at five truck stops throughout the valley. Bruce's Truck Stop became only the sixth Idle-Air installation in America when the first units opened last year.

"The technology is very popular with truck drivers," said Todd DeYoung, the air district planner who oversees the program. "At several of the truck stops that have the IdleAir technology, the spaces fill up extremely quickly. They like the service, and it's a significant cost savings for them, as well as a significant emission reduction for us."

More IdleAir units can be found at Love's Truck Stop along Interstate 5 in Lost Hills. There are two other California locations, in Ripon and Los Banos, with more on the way.

The IdleAir Technologies Corp., based in Knoxville, Tenn., operates 14 sites nationwide, mostly in the South, with 16 more under construction. In April the company signed a contract with Pilot Stopping Centers, the largest truck-stop operator in the nation, to provide IdleAir service at every Pilot location in America.

"It's an idea whose time has come," said Chuck Emerson, IdleAir site manager in Bakersfield. He said the Bruce's site has had 13,000 customers over the past year, and about 600 of those have become regulars.

"Everyone loves the environment. We've got the trucks so they just shut their motors off for extended stays, so that's less pollution in the air."

The U.S. Department of Energy estimates that heavy diesel trucks spend up to half their lives idling, wasting more than 800 million gallons of fuel annually in the process.

That's a lot of unnecessary air pollution. A 2002 study by the U.S. Environmental Protection Agency found that, on average, a single diesel truck emits 144 grams per hour of smog-forming

oxides of nitrogen (NOx) while idling, and 8,224 grams per hour of carbon dioxide, a global-warming gas.

DeYoung said the air district estimates its project to install 225 IdleAir units will eliminate 2,933 tons of NOx and 7.25 tons of particulates over five years. The valley is out of compliance with federal standards for both pollutants, so every reduction helps.

To put it in perspective, that NOx reduction is about equal to all the NOx produced by petroleum refineries in the valley.

To use IdleAir, a driver must first purchase a plastic window adapter to mount the unit in the cab's passenger-side window. This costs about \$10, and the driver keeps it to use at other IdleAir locations.

Once mounted in the window, the driver opens the hinged cover on the IdleAir unit -- slightly bigger than a dinner plate -- to reveal a large air conditioning vent on one side and a 10-inch computer touch-screen on the other. He or she then swipes a credit card or an IdleAir account card through a slot to start the system, then uses menus on the screen to set cab temperature and choose from a variety of functions.

The screen can display television, movies and the Internet, or the driver can plug in his own television or computer. There are USB and ethernet ports, plugs to connect a telephone (local calls are free), and four 110-volt electrical outlets to run household appliances or tools.

"It's got everything you could want while you're on the road," said Joyce McAdams, Gaudet's girlfriend, bookkeeper, and regular traveling companion. "I'm really impressed."

All this comes at a price of \$1.25 an hour.

By comparison, diesel fuel currently costs about \$2.05 a gallon, and the average truck consumes nearly 1 gallon per hour while idling. So it is easy to see how a trucker can save money.

Gaudet notes there are other savings as well. Truckers pay road taxes based on their fuel efficiency. A driver who cuts out idling gets better miles per gallon and pays fewer taxes.

By avoiding long idling periods, Gaudet also saves wear and tear on his engine. Having just spent \$12,000 rebuilding the motor in his truck, Gaudet hopes to make the engine last as long as possible by avoiding idling.

"I would probably still use it even if fuel went down to \$1 a gallon, because I wouldn't have the wear on my engine," he said.

[Wednesday, June 09, 2004, Editorial Board Turlock Journal](#)

### **spare the air**

Take a deep breath. You probably don't notice anything different, but that's the Central Valley's summer air that just circulated through your lungs, and chances are - at least on a hot day - you just inhaled an unhealthy ozone soup.

That's why the San Joaquin Valley Air Pollution Control District is kicking off its annual Spare the Air season once again.

On hot days, chemicals like paint and degreaser fumes combine with car emissions to create ozone.

On days when ground-level ozone is expected to be unhealthy, air district officials will ask Valley residents to avoid unnecessary driving trips.

Additionally the air district discourages use of aerosol sprays and lighter fluid for barbecues on Spare the Air Days.



More than half of the Valley's smog problems come from vehicle use," said Janelle Schneider, Spare the Air Coordinator, in a press release. Cutting down on unnecessary trips by car-pooling or combining errands into one trip can do wonders for the air we breathe.

The Valley's air is listed at the same level as the air in Los Angeles, long known for its notorious smog problems. Air in the Valley is remarkably unhealthy. According to the report by the Central Valley Health Policy Institute at California State University, Fresno, one in five Valley adults has asthma.

The Central Valley is vulnerable to air problems because it is shaped like a long, narrow bowl. Mountains on both sides trap pollutants near the Valley floor while hot summer temperatures help produce harmful ozone.

According to the district, the Valley experiences between 35 and 40 days each year when the air exceeds federal health standards for ozone and more than 100 days above the state standard. Voluntary measures like Spare the Air are a good way to address the problem, but we believe more can be accomplished. Approximately 27 percent of air pollution in the northern portion of the Air Pollution Control District, which includes Stanislaus County, comes from the Bay Area. The problem may be restricted to the Valley region but the solution is multi-regional. The Bay Area needs to become a larger part of the solution.

But we can work wonders on our own, simply by cutting down the number of trips we take and avoiding activities like mowing the lawn with gas-powered mowers during Spare the Air days. Daily air quality information is also available by dialing 1-800 SMOG-INFO (766-4463).

[Wednesday, June 9, Los Angeles, editorial](#)

## **RUMBLE SEAT**

**Ahhhh, it's like a breath of fresh air**

**Ford's low-emission 2005 Focus is among a growing class of gas-powered vehicles that are actually greener than electrics.**

By Dan Neil

No one loves breathing more than I do. Some think breathing is overrated - the dead, for instance. Not me.

So props to the members of the California Air Resources Board for being such sticklers about, well, air. In the past 14 years, the board has put the screws to automakers, requiring them to sell more clean vehicles as part of the state's zero-emission vehicle mandate.

Much of this history is of the seeing-sausage-made variety. However, as it stands now, beginning in 2005 automakers can partially fulfill their rising quota of California-certified green vehicles with PZEV vehicles. PZEV stands for partial zero-emission vehicle and it is the highest standard for gasoline-engine vehicles.

To qualify as a PZEV, a vehicle must first meet the super-ultra-low-emission vehicle standard: 97% fewer hydrocarbon emissions, 76% less carbon dioxide and 97% less nitrogen oxide than the national Tier 1 emission standard.

A PZEV must also have no evaporative losses (gas fumes) from the fuel system. And the whole shebang - powertrain and fuel system - has to be warranted to meet standards for 15 years or 150,000 miles.

PZEV vehicles actually pollute less than electric vehicles, if you account for the source-point pollution of the power plants recharging them. In some atmospheric conditions - a brown day in San Bernardino, for instance - PZEV vehicles actually clean the air, which is to say, their emissions are cleaner than the air sucked into the engine.

In terms of noxious emissions, your spouse pollutes more than a PZEV.

Despite automakers' long and litigious assertions to the contrary, they have been able to develop the compliant technologies. There are currently more than 30 PZEV vehicles on the market (visit <http://www.driveclean.ca.gov>), including BMW's 3-Series cars and wagon, Honda's Accord, Subaru's suite of Legacy cars and wagons, and Volvo's big V70 wagon - not exactly hair shirts of eco-martyrdom.

So let's hear it for big government. Had California not used its enormous leverage in the marketplace - the state is the biggest vehicle market in the country - the automakers would not have been motivated to develop the engineering that will, now that it is available, become integrated into the larger vehicle market. California's zero-emissions mandate has been adopted, with some variation, in the "green states" of Maine, New York, Vermont and Massachusetts. Why, clean air is spreading like a prairie fire.

Breathing may yet make a comeback.

I spent a week recently with a PZEV-certified Ford Focus. The Focus has been lightly redesigned outside and in for 2005. The new cars are powered by next-generation Duratec engines in displacements of 2.0 and 2.3 liters. The PZEV cars employ the 20E version of the 2.0-liter engine (130 horsepower).

The new Focus is a nice little urbanaut - I drove the workaday SES trim level - and Ford will be happy to PowerPoint you to the brink of insanity with charts showing improvements in Focus' initial quality and customer satisfaction. The suspension has been beefed up, the brakes enlarged, and the exterior and interior styling have a finer, more formal line.

All stipulated. What interested me, however, was the means by which you turn a gas-powered automobile into a four-wheel room freshener.

The first order of business is to improve combustion efficiency. The 20E uses a very trick set of butterfly valves situated in the four intake runners to increase turbulence ("swirl") in the cylinders at low rpm. These valves also allow the engine to run very lean mixtures without stumbling or stalling during cold starts. Special 12-hole fuel injectors - as compared to the usual four-hole design - better aerosolize the fuel.

Anyone who has ever rebuilt an engine can't help but admire the machining precision required to make this engine PZEV. The cylinder bores have to be micron precise so that no oil slips past the rings for 150,000 miles. To achieve those tolerances, Ford had to buy millions of dollars' worth of special honing machinery. And if such oil leakage does occur, Ford won't attempt to fix it in situ. The dealer will simply jerk the engine and install a new one. The faulty engine would likely go back to Dearborn for an R&D autopsy.

Peak tailpipe emissions are associated with cold starts, before the catalytic converters in the exhaust system have reached operating temperatures - the "light-off" point. To improve light-off speed, the 20E design situates the catalytic "bricks" practically inside the exhaust manifold. Ford calls it a "mani-cat" design. To further improve light-off response, the 20E uses a thermactor valve that forces hot gases toward the catalytic bricks until they are up to temperature. Another set of catalytic bricks is situated farther down the exhaust pipe to clean up any remaining pollutants.

PZEV's evaporative emission standard is just as daunting. Most cars release a faint vapor of evaporating gas leaching from fuel connectors, the engine intake and their plastic gas tanks, through which naughty molecules escape. The Focus PZEV uses a steel gas tank and leak-proof connectors and fuel lines.

Another source of hydrocarbon vapors: when a vehicle is shut off, some of the fuel-air mixture floats back through the intake system. The Focus has a hydrocarbon trap that acts like a sponge, soaking up loose hydrocarbons in the intake. When the engine is restarted, this trap releases the hydrocarbons to be burned in the engine.

Thus equipped, a Focus PZEV produces 1 pound of smog-forming pollution for every 15,000 miles driven, roughly one-tenth that produced by last year's Focus with a Zetec engine. Meanwhile, fuel economy and engine torque are both up fractionally.

And they said it couldn't be done. In fact, they always say it can't be done.

That's the message I take from the Focus PZEV. Carmakers routinely lobby and litigate against government-mandated improvements to the automobile - from shoulder belts to CAFE standards - using the same arguments: It will cost consumers more money; it will put people out of work; it can't be done. And yet time and again we see it can, when the genius of the auto industry is put to work.

We should always ask for more.

[Monday, June 7, Modesto Bee, letters to the editor](#)

#### **Air rules threaten agriculture**

Our agricultural industry in San Joaquin County, which provides much needed jobs to local families, is being overcome by excessive regulations being imposed by the San Joaquin Valley Air Pollution Control District. A more reasonable approach should be explored that provides more flexibility and less red tape.

**ARTHUR MURRILLO**

Stockton