

Clean-Air Choices Today – and Tomorrow

Santa Barbara County
Air Quality News
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March–June 2003

Choices we make today can help clean our air, and strategies and technologies currently in development will make even more choices available to us in the future.

APCD took this message to environmental events in Goleta, Santa Maria, Santa Barbara, and Vandenberg Air Force Base in April and May. Visitors to APCD's booths received prizes for arriving without a car, or making a car free pledge, heard about APCD's educational programs, and checked out a working solar/fuel cell model that demonstrates solar energy, hydrogen, and fuel cell technologies.

"It's important to understand the link between the things we do every day, and the pollution that winds up in our air, our water, and our soil," said APCD Director Doug Allard. "As we look ahead, we need to understand both our high-tech and our low-tech options. Our future will depend on our ability to integrate a range of choices in these areas."

As cars and trucks are the main source of smog-forming



Winners of APCD's Santa Barbara Car Free project Earth Day promotion with their prizes: Steve Hahn (left), and Karen Egerman (right), with Mary Byrd (center), Santa Barbara Car Free project manager.

pollution in our county, one important clean-air choice we can make today is to drive less—and to walk, bike, carpool, telecommute, or take the bus or train, more. Looking into the future, we can work to encourage community planning that's less dependent on the car, and more friendly to walkers, cyclists, and bus or train riders.

We can also choose to make the next car we purchase a clean-air car (see page three), and learn about advanced clean-air vehicle and energy technologies of the future.

This year's Santa Barbara's Earth Day celebration featured a "Come to Earth Day Car Free and Win" promotion by APCD's Santa Barbara Car Free project. People who arrived at Earth Day without a car could visit APCD's booth to register to win roundtrip Amtrak Pacific Surfliner @ tickets every hour, provided by Amtrak, or grand prizes of an electric bike and a Cap'n Billy's Whiz-Bang Scooter-Electric, both provided by the Electric Transportation Company. People who arrived at Earth Day with a car could

make a car free pledge and register to win in some of the drawings.

More than 330 people registered as car free and more than 120 people registered making a car free pledge. Even more people arrived car free than registered at the booth. "We were so successful with our message that we completely ran out of bike parking. We'll add more next year," said Sigrid Wright, Communications Director for the Community Environmental Council, which coordinates the Earth Day celebration in Santa Barbara. Wright worked with the Car Free project on the promotion. About half the people who arrived car free said the promotion affected their transportation decision. Fifty-four percent arrived on foot, thirty-four percent arrived by bike, and the remaining twelve percent arrived by bus, train, and a variety of other modes, including skateboards.

(continued on page two)

••• Green Award Nominations are due June 27! See www.greendifference.org •••

We're Moving!

As of July 1 our new address will be:

Santa Barbara County Air Pollution Control District
260 North San Antonio Rd., Suite A, Santa Barbara, CA 93110-1315

Our phone number (805-961-8800), individual phone numbers, and website address (www.sbcapcd.org) will remain the same.

Inside...

- ❖ Outside the Box
- ❖ Board Roundup
- ❖ A Clean-Air Car Primer
- ❖ Hydrogen
- ❖ Boeing and APCD Agreement
- ❖ Air Pollution and Health

Clean-Air Choices

(Continued from page one)

Sixty-seven percent of the people who arrived car free typically use alternate modes of transportation to get to work, while thirty-two percent of the people who didn't arrive car free use alternate transportation to get to work. People pledged to: "bike 90 percent of all trips;" or "carpool with co-workers to and from work;" or "take the bus as often as possible;" or "take my son to the park via bicycle;" or "walk to work."

The Grand Prize winner of an electric bike, Karen Egerman, reported that the car free



APCD public outreach intern Denyse Avila helped at APCD's booth at Earth Day events in Santa Barbara and Santa Maria, and also at APCD's table at several school science fairs in April.

promotion definitely influenced her decision to walk to Earth Day from the Mesa area. Egerman moved to this area in January and didn't – yet – own

a bike. Said Egerman, "I'm so excited! I'll be able to bike all over town and tackle the hills on the way home." Steve Hahn, Second Place Prize Winner, made a car free pledge at APCD's Earth Day booth to ride his bike to work more – a pledge he is now putting into action with his electric scooter. At Santa Maria's Earth Day celebration, visitors to APCD's booth filled out a survey and registered to win Amtrak Pacific Surfliner® tickets. Examples of pledges by survey respondents include: "to buy a hybrid when I replace my existing car;" "to plant more trees;"

"to share information about carpooling and recycling;" "to ride my bike more;" and "to walk to the store more often."

For more information on commute and weekend car free transportation options, visit www.trafficsolutions.info and www.santabarbaracarfree.org.

Outside the Box

An occasional feature highlighting APCD staff accomplishments outside the agency.

Air Quality Specialist Marc Moritsch operates and maintains APCD's monitoring station network, and verifies monitoring data collected throughout the county for accuracy and consistency. Outside the box, Marc is an accomplished nature photographer whose work has gained international recognition. His picture of a Siberian tiger appeared on the cover of the February 1997 issue of *National Geographic*, and he won a 2001 *Nature's Best* award for his picture of a zebra at sunset in the Amboseli Game Reserve in Kenya. His work often appears on greeting cards, calendars, and advertisements, and one of his pictures of an endangered species lizard just appeared in a camera ad in the May 2003 issue of *National Geographic*.



Marc first became interested in photography almost thirty years ago in a high school class. "I was inspired by the work of people like Ansel Adams, and I thought: 'I can't draw, but this is a way to capture what I see,'" he relates. He has a degree in wildlife management, and in the

1970s and 1980s he worked as a biologist in Idaho, and met many research biologists. It was one of these friends who called him up in Santa Barbara one day in the fall of 1994, and asked if he would like to go to Russia to photograph Siberian tigers. A research institute was looking for a photographer.

Marc and the institute team left for Russia in February of 1995. Notes Marc, "The first time I saw a tiger it felt like a dream. They are such incredible animals." Over the next two years, Marc went back and forth, spending many months in a part of Russia just to the

south of Siberia. Then, in December of 1996, *National Geographic* called. "When they told me they were going to use my work it was just unbelievable. In the past, I had only donated a few photos here and there to government publications, nothing like this. It was like hitting the home run the first time you're at bat!"

Marc has kept tabs on the tiger that was pictured on the cover. His name is Globus, and he was brought to the U.S. for breeding programs not long after Marc took his picture. Globus is currently at a zoo in South Carolina. Notes Marc, "This whole experience was a highpoint in my life. I feel so incredibly lucky to get an opportunity like this that so few people ever get."

A Clean-Air Car Primer

APCD Board Roundup

Following are the highlights of the March/May Board meetings.

March

- ✓ Accepted \$201,809 from state Carl Moyer funds with up to \$100,905 in APCD matching funds.
- ✓ Received and filed the 2002 Air Toxics “Hot Spots” Annual Report.
- ✓ Repealed APCD Rule 338, Control of Asbestos Containing Serpentine Rock in Surfacing Operations.
- ✓ Received a briefing on USEPA’s finding that the state’s permit exception for agriculture is inconsistent with federal rules.
- ✓ Proclaimed April 26 and 27, 2003 as Earth Day 2003, May 2003 as Clean Air Month, and May 17-25, 2003 as Bike Week 2003.
- ✓ Established an Executive Committee of DeWayne Holmdahl, Sam Arca, Cynthia Brock, Marty Mariscal and Gregg Hart to advise APCD staff between Board meetings.

May

- ✓ Presented Resolutions of Appreciation to Larry Lavagnino and to Sam Arca for their service on the APCD Board.
- ✓ Authorized the Chair to sign letters to congressional representatives urging them to maintain funding for the CMAQ program, and to support AB 471 – Reduction of Air Emissions from Cruise Ships.
- ✓ Conducted hearing on APCD budget for Fiscal Year (FY) 2003/2004, and set a second hearing for June 19 to consider budget adoption. Heard testimony requesting reductions in Air Quality Attainment Plan fees as outlined in the 2003/2004 budget.

When you go to buy a new car, check out its air pollution and energy efficiency characteristics. See below for an explanation of some of the terms.

ZEVs are zero-emission vehicles, the cleanest you can find. The only ZEVs are electric vehicles, and some fuel cell vehicles (not available yet for consumers).

PZEVs are partial zero-emission vehicles, and automakers get partial ZEV credit for making these. They’re cleaner than SULEVs – they have a design that prevents evaporative emissions from coming out of the gas tank. There are PZEV versions of gasoline car models on the market today. See the California Air Resources Board Buyers Guide: www.arb.ca.gov/msprog/ccbg

SULEVs are super-ultra low-emission vehicles. There are both gas SULEVs and gas-electric hybrid SULEVs on the market today.

ULEVs are ultra low-emission vehicles, somewhere between a SULEV and a LEV (low-emission vehicle).

Gas-Electric Hybrid vehicles have both a gasoline engine and fuel tank, AND an electric motor and battery, and refuel with gasoline; the batteries are recharged as the vehicle is moving. The Toyota Prius and the Honda Civic Hybrid and Honda Insight are hybrid vehicles that are currently on the market. APCD and the California Energy Commission have had a \$1000 incentive that applies to the Honda models, a few additional incentives may be available (contact Gary Hoffman at 961-9919 or hoffmang@sbcapcd.org for more information).

Biodiesel vehicles are vehicles with diesel engines that burn biodiesel. The term “biodiesel” is used to refer to different substances: a fuel that is 100 percent “virgin” vegetable oil, often soy oil; a fuel that is 100 percent recycled vegetable oil

(often recycled from restaurant use); and a fuel that is up to 80 percent petroleum diesel and 20 percent vegetable oil. The emissions from biodiesel vehicles can vary a lot, depending on the type of vehicle and fuel’s composition, and whether or not there are emission controls on the vehicle. From an air pollution standpoint, a PZEV, SULEV or ULEV vehicle will run much cleaner than an older diesel vehicle without advanced emission controls burning a “biodiesel” blend that is actually 80 percent petroleum diesel. However, there are renewable energy and other advantages to use of 100 percent biodiesel. More information is needed.

To compare cars for energy efficiency, see the EPA Green Vehicle Guide: www.epa.gov/greenvehicles/

For more information, and links, see www.sbcapcd.org/sbc/linkscars.htm.





APCD Board Calendar

Air Pollution Control District Board

Supervisor Naomi Schwartz

First District

Santa Barbara County

Supervisor Susan Rose

Second District

Santa Barbara County

Supervisor Gail Marshall

Third District

Santa Barbara County

Supervisor Joni Gray

Fourth District

Santa Barbara County

Supervisor Joe Centeno

Fifth District

Santa Barbara County

Mayor Victoria Pointer

City of Buellton

Mayor Dick Weinberg

City of Carpinteria

Councilmember Cynthia Brock

City of Goleta

Councilmember Carlos Aguilera

City of Guadalupe

Councilmember DeWayne Holmdahl

City of Lompoc

Councilmember Gregg Hart

City of Santa Barbara

Councilmember Marty Mariscal

City of Santa Maria

Councilmember David Smyser

City of Solvang

*All meetings start at 2 p.m.
For final meeting agendas,
call the APCD Board Clerk,
961-8853.*

June 19

Board of Supervisors
Hearing Room
105 East Anapamu Street
Santa Barbara, CA 93101

July 17**

Board of Supervisors
Hearing Room
511 East Lakeside Parkway
Santa Maria, CA 93455

August 21

Board of Supervisors
Hearing Room
105 East Anapamu Street
Santa Barbara, CA 93101

September 18**

Board of Supervisors
Hearing Room
511 East Lakeside Parkway
Santa Maria, CA 93455

*** Will most likely be cancelled: check
with APCD Board Clerk Linda Beard,
961-8853, beardl@sbcapcd.org*

Community Advisory Council

The APCD Community Advisory Council meets the second Wednesday of every month at the Days Motor Inn in Buellton. The public is welcome. For more information, call Linda Beard, 961-8853.

Air Pollution and Health

Recent studies show:

- ❖ High levels of fine particles can cause a higher incidence of heart attacks and lung cancer.
- ❖ Air pollution can help cause asthma, and can worsen symptoms in children and adults who already have asthma or other lung conditions.
- ❖ Air pollution can affect the growth of lung function in children.
- ❖ More than 70 percent of the cancer risk from air toxics is caused by diesel exhaust particulate, considered the number one airborne carcinogen in California.

For more information, see our website: www.sbcapcd.org



Santa Barbara County
Air Pollution Control District

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(805) 961-8868

Daily Air Quality Report

www.sbcapcd.org

Complaints/Public Information

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On the Air is a bimonthly newsletter published by the Community Programs Section of the Santa Barbara County Air Pollution Control District. For further information on items in this newsletter, or to be added to our subscription list, please call Bobbie Bratz, 961-8890 or Email bratzb@sbcapcd.org.

Our Vision: Clean Air



Hydrogen: Fuel of the Future?

Hydrogen is the most abundant element in the universe, the lightest in weight of all the elements, and the simplest in its atomic structure: just one electron and one proton. It typically exists as two atoms, or H₂, and is rarely found alone, as it is highly reactive and combines easily with other elements. Hydrogen combines with oxygen to form water, and with carbon to form hydrocarbons, including petroleum-based fuels.

Hydrogen's unusual chemical properties affect its use as a fuel:

- ❖ It is highly flammable, and has a very high energy content for its weight (nearly three times as much as gasoline).
- ❖ When burned, it produces next to no air pollution.
- ❖ When used as the fuel in a fuel cell, it reacts chemically to produce electricity without air pollution.

❖ It can be extracted from fossil fuels; it can also be produced from renewable sources such as ethanol, or water. The process of extracting and storing hydrogen can, however, produce some pollution, and require some energy.

A recent forum on hydrogen in Santa Barbara featured energy experts debating its future use for power generation and in vehicles.

"On a very large scale," said Peter Jeschke, President of MEI Power Corp, "you can theoretically get hydrogen to the

pump for about the same cost as gasoline. The problem is the infrastructure to do that has yet to be built."

While we may be able to extract hydrogen from renewable sources sometime in the future, said Jeschke, "Historically, it has been much cheaper to produce hydrogen from natural gas than from water. Today, the reality is that we're getting most of our hydrogen from fossil fuels. And we can expect that to continue, at least for awhile."

APCD General Source Division Manager Peter Cantle, notes that this reality provides an



S. David Freeman, Chair of the Board of the California Power Authority

opportunity to make a smooth transition to hydrogen using our existing fuel delivery infrastructure: "In the near future, we can extract hydrogen from natural gas and other fuels, and begin to base our power generation and vehicle technologies on hydrogen. We can reap the clean-air benefits, as we transition to a future of being able to generate hydrogen from renewable energy sources." Cantle is APCD's representative in the Santa Barbara Regional Energy Alliance, an organization dedicated to working for energy solutions in the region. APCD is a founding member of the Alliance.

S. David Freeman, the Chair of the California Power Authority, spoke at the recent forum, urging the audience to work for a hydrogen future: "If we decide it's time to usher in the hydrogen economy, this is in no

(continued on back)



Above: Werner Lehmer (center), of the BMW Engineering and Test Facility in Oxnard describes features of the pump used to fuel the test vehicles with liquid hydrogen as APCD Engineer Gary Hoffman looks on.



Left: APCD General Source Division Manager Peter Cantle with Lauren Tulp of State Assemblymember Hannah Beth Jackson's Office, at the recent hydrogen forum.

APCD and Boeing Announce Agreement on Permit

In May, APCD and The Boeing Company announced the resolution of an appeal by Boeing of an APCD permit that covers operations of marine vessels to transport a rocket launching system used at Vandenberg Air Force Base.

“I am pleased that the negotiating process was successful, and produced an agreement that gives both sides adjustments that were needed. Our goal was to protect clean air while ensuring that the space industry can continue to thrive. We accomplished that,” said APCD Director Doug Allard.

According to Jim Boyle, Director for Boeing’s VAFB launch sites, “Boeing is pleased with the efforts undertaken by the APCD to balance the needs of industry against the need for clean air and accountability. We are hopeful that the processes and relationships put into place as a result of these negotiations will be the foundation for a successful partnership for many years to come.”

As part of the agreement, Boeing will continue to provide full mitigation for air pollution from vessels

associated with the project while these vessels operate adjacent to Santa Barbara County. Boeing will also provide the APCD with data that will allow more accurate estimates of the emissions from the Delta Mariner as well as its position, and will install fuel metering equipment to track fuel use. By more accurately tracking the vessel location and fuel use, Boeing will benefit by reducing its permitted emissions and thereby reduce the amount of air quality mitigation it has to provide in the form of offsets.

APCD has agreed to modify Boeing’s permit, and to initiate a change to an APCD rule that reduces the area in which marine vessel emissions are required to be mitigated.

The agreement announced in May was the culmination of a process that began when Boeing appealed its permit to the APCD Hearing Board in January.

Hydrogen (cont’d from front)

way an impossible dream.” Referring to costs cited for the moving to a hydrogen-based system, Freeman said, “All these cost figures are inherently misleading, because we can’t afford NOT to do it. I want all of us to think fundamentally about this issue. The numbers are a picture of the past, but the numbers lie. They don’t include the most important things, like life or death and whether we can breathe clean air.” He noted: “Every day, we’re learning more about the dangers of air pollution. There’s no way we can burn as much gasoline as we do on our city streets and be healthy.”

Freeman stressed that hydrogen could be used in the short term to fuel internal combustion engine vehicles, and that the hydrogen economy did not need to wait for fuel cell vehicle technology to mature: “We don’t have to wait until our grandchildren have fuel cell vehicles to move to a hydrogen economy.” BMW is developing an internal combustion engine vehicle that can run on either liquid hydrogen, or gasoline. APCD staff recently visited a BMW facility in Oxnard and toured the liquid hydrogen fueling station there, one of only two in the state (see photo).

Freeman suggested that people throw hydrogen parties and get everyone there to pledge to walk into auto dealerships and attempt to order a hydrogen car: “The wonderful thing about the free enterprise system is that if enough people walk into showrooms and say ‘I want my next car to run on hydrogen’ – it will happen.”

Freeman noted that moving towards hydrogen-based systems, and eventually being able to produce hydrogen from renewable sources, including water, “will take a very strong, concerted engineering effort. But this isn’t something we Ought to

do, it’s something we Have to do. And I don’t think there’s any place on earth with a better shot than California at getting it done.”

For more information, see www.eere.energy.gov, and follow links for hydrogen.