

California's Global Warming Solutions

In September, California's Governor signed into law Assembly Bill 32, the Global Warming Solutions Act. AB 32 requires the California Air Resources Board to develop regulations and market mechanisms to reduce greenhouse gas emissions in the state to 1990 levels by 2020. Greenhouse gases contribute to global warming, also known as global climate change. For details on AB 32, see box on page two.

On the Air spoke recently with Charles Kolstad, Professor of Environmental Economics at the Bren School of Environmental Science & Management at the University of California at Santa Barbara. Kolstad is a lead author with the Intergovernmental Panel on Climate Change (IPCC), currently working with authors from other countries on a chapter identifying best

practices in governmental climate change policies for the IPCC's next climate change report, expected next year.

How do you see the response to AB 32 internationally?

It's certainly getting a lot of international attention. It's seen as something very important – not just for California, or the U.S. – but for the world. It's not as strong a reduction as the Kyoto Protocol – AB 32 requires going to 1990 levels of greenhouse gases by 2020, while Kyoto requires going to 7 percent below 1990 levels. But frankly, many countries are not going to meet the Kyoto requirements, and Kyoto is going away in 2012. California's law is permanent. Many people don't



Charles Kolstad, Professor at the Bren School of Environmental Science & Management at the University of California at Santa Barbara, and a lead author with the Intergovernmental Panel on Climate Change.

realize that California is one of the top ten economies in the world, and one of the top ten emitters of greenhouse gases. So this is a real step forward.

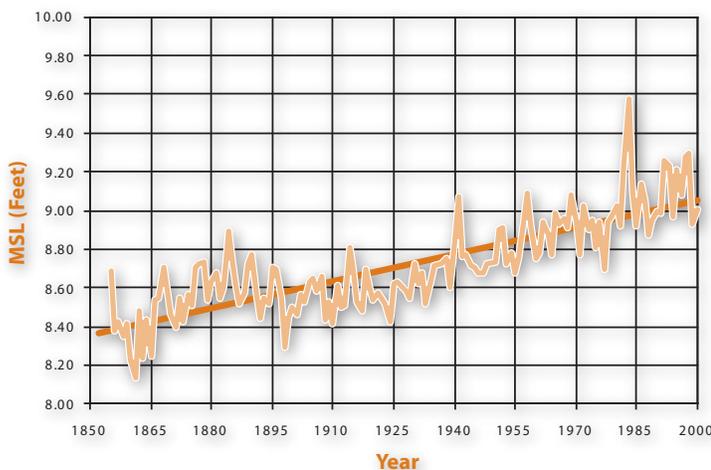
What about concerns about the impacts and costs of implementing AB 32?

My sense is that the potential costs and dislocations of the AB 32 measures have been exaggerated. If this is done well – and some of the language in the bill indicates an effort to go about this the right way – it won't be free, but it won't have serious impacts.

We've done something similar before. Remember, in the 1970s California made a decision to stop growing the demand for electricity. The state implemented a range of measures to do this – and succeeded. Per capita electricity consumption in the state has been fairly stable for the last three decades. While electricity consumption per capita has increased steadily in the U.S.

(continued on page two)

Rise in Sea Level Along California Coast San Francisco Yearly Mean Sea Level (1855-2000)*



* Source: California Environmental Protection Agency, Environmental Protection Indicators for California, 2001

One predicted outcome of global warming/climate change is a rise in sea level. The San Francisco data from the Golden Gate (left) show the sea level rising at an accelerating rate. From 1855 to 1997, the rate is about 0.47 ft./century, but during just the 1925 to 1997 time period, the rate is much higher, 0.75 ft./century, nearly identical to the 0.74 ft./century trend at La Jolla over the same period. This agrees with tide gauge data that show that the global average sea level rose 4 to 8 inches during the 20th century.

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-  **Wheel of Change**

Global Warming (cont'd)

as a whole, it's stayed relatively flat in California. So this is similar to what we're talking about doing with greenhouse gases. But it's very important that the state do this well.

What would doing this well look like?

It has to be flexible. There are some parts of the economy that will have an easier time reducing carbon emissions than others. Flexibility will help balance the difficulty across the economy. Of course the problem is that certain groups will be lobbying lawmakers and that could impact how this is done.

Which sectors of the economy have the most potential for easier reductions?

I think we can get a lot of the emission reductions from the electricity sector, and some from the transportation sector. We're almost there with just those two – and we can get some additional reductions spread across a number of other areas. One important element already in the bill will help a lot, and that's the fact that it does address

power from out of state. We can get power from all across the West, and balance the sources, so we have a lot of choices there.

What do you think are some of the biggest misconceptions people have about climate change?

People just don't have a good feeling for what's wrong with climate change. They hear about this slight increase in temperature, and don't think this is such a bad thing. It's difficult to grasp. It's not like seeing a person with asthma struggling from the effects of air pollution – that's very real to people. With climate change, it's harder to find a smoking gun. But its effects are still very real and important.

The state has come out recently with some reports projecting impacts of climate change on California. How do you see this, and which impacts are of most concern for us here in Santa Barbara County?

I think some projections of damage may not be as valid as others. For example, there has been concern about impacts on water supply from the projected

reduction in the size of the Sierra snow pack. This is something that we can address – we have a lot of water in the state, and we can make choices about how we use it, and avoid shortages, though possibly at the expense of some very water-thirsty crops. Changes in water supply may have a big effect on agriculture, though less so changes in temperature. The wine industry, for example, will probably be able to make adjustments by changing where we plant certain varieties. I'm not a Chicken Little on climate change. I think people are very adaptable, and we can make changes. But I do think it's a significant problem, one we can – and should – do something about.

Coastal flooding is the real issue. Not just along the sea coast – but also in river deltas. This is probably the area where the most damage will occur in the state. And it's also probably the area of most concern for us here in Santa Barbara County.

It's important to remember that when we talk about sea level rise, it's not only about an average overall rise. There's also

the risk of a sudden, big increase in sea level from the melting or breaking-off of an ice sheet for example. This would be an abrupt change and could cause a lot of damage.

I think mostly the biggest damage from climate change will not be from the things that happen very gradually and slowly – because those give us time to adapt. It will be from abrupt and unexpected changes. Say if a levee is breached in the Sacramento Delta. Or we suddenly see intense heat waves, or big impacts on ecosystems.

An important thing to remember is that there are a lot of unknowns. And it's the things we don't know about that could hit us the hardest.

For more information and links on climate change, see our website at www.OurAir.org. To view reports of the Intergovernmental Panel on Climate Change, see www.ipcc.ch.

California's Global Warming Solutions Act — Timeline

AB 32, the Global Warming Solutions Act, requires the California Air Resources Board (ARB) to take actions by a timeline specified below:

❖ **By July 1, 2007:** ARB must adopt a list of early action measures that can be adopted or implemented before January 1, 2010.

❖ **By January 1, 2008:** ARB must adopt regulations for mandatory greenhouse gas emissions reporting, define the 1990 emissions baseline, and establish this as the 2020 statewide cap.

❖ **By January 1, 2009:** ARB must adopt a plan indicating how emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

❖ **By January 1, 2010:** Early action measures take effect.

❖ **By January 1, 2011:** ARB must adopt regulations to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, including provisions for market mechanisms and alternative compliance mechanisms.

❖ **By January 1, 2012:** Rules and market mechanisms take effect and are legally enforceable.

❖ **By December 31, 2020:** Statewide greenhouse gas emissions have been reduced down to 1990 levels.

ARB will determine the role local air districts such as APCD will play in implementing elements of AB 32. APCD does not currently regulate greenhouse gas emissions. However, many of APCD's rules and regulations designed to reduce smog and particle pollution also reduce greenhouse gas emissions.

Wildfire Smoke: Advisories, Precautions, Variables

APCD Board Roundup

Following are the highlights of the August and October Board meetings.

August

- Approved additional funding of \$300,000 for the Off-Road Diesel Repower Program.
- Received an update on a program funding increase for the APCD Old Car Buyback program.
- Approved and presented a Resolution of Appreciation to Dr. Sanjib Mukherji for his service over many years with the APCD.
- Authorized the APCD to act as collector and distributor of funds for a project retrofitting an ocean-going vessel with emissions control equipment.

October

- Received summaries of emission-reduction grants approved by the Director.
- Adopted the 2007 calendar for APCD Board meetings.
- Authorized the Director to renew multiple employee benefit insurance plans.
- Established an annual procedure for the Board's evaluation of the Director's performance and salary.
- Approved participation in the fiscal year 2006/2007 Carl Moyer Program.
- Authorized the Director to execute services agreements for the emission testing of an ocean-going vessel retrofitted with control technologies, using partner contributions, and up to \$22,500 of APCD Innovative Technology Group funds.

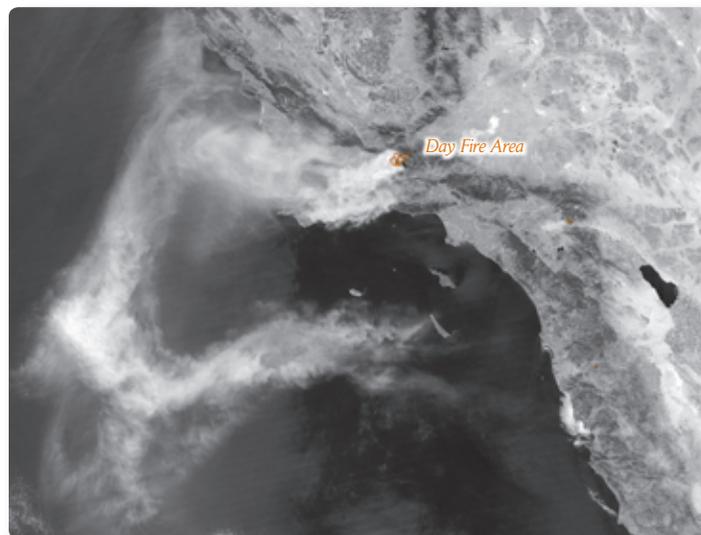
Smoke from the Day Fire, which burned more than 160,000 acres in the Angeles and Los Padres National Forests, affected parts of Santa Barbara County in September, causing APCD to issue smoke advisories and precautionary statements.

What's the difference? APCD Public Information Officer Bobbie Bratz explains: "When we know that smoke will impact at least some part of the county, we issue a smoke advisory calling on people in affected areas to avoid outdoor activities. When we know there's a strong possibility that smoke could come into the county – but we're not certain – then we issue a precautionary statement. This is more of a heads up – a reminder that the air could get smoky, and to keep that in mind when making plans." She adds, "But whether it's an advisory or a precautionary statement, the main thing is to exercise judgement. If the air is smoky, it's better to modify your schedule to avoid outdoor activities – reschedule that soccer game or your afternoon run."

The Day Fire provided an illustration of how different variables and weather conditions can affect the impacts on our county's air. On September 17, strong Santa Ana winds blew smoke from the fire into Santa Barbara County, and APCD issued a smoke advisory. The following weekend, winds aloft kept the smoke high in the air, and APCD issued a precautionary statement, since the smoke was not impacting the air at ground level in much of the county.

Individuals should not wait for the APCD to issue advisories or precautionary statements to modify their exposure to smoke. If smoke is in the area, take precautions to minimize your exposure. As evidenced during the Day Fire, conditions change frequently and may vary in intensity throughout our county.

For more information on wildfire smoke, see this page of our website: www.sbapcd.org/edu/fires.htm.



This satellite picture (courtesy of NASA) taken September 17, 2006, shows smoke from the Day Fire blanketing Santa Barbara County.

Top Ten 2007 Vehicles for Fuel Economy

The U.S. Environmental Protection Agency recently published the top ten 2007 model vehicles for fuel efficiency. The list follows, along with city/highway miles per gallon. (Note: some hybrid gas-electric vehicles get better mileage in city driving.) For more information see www.epa.gov/fueleconomy; also see www.fueleconomy.gov.

1. Toyota Prius Hybrid: 60/51
2. Honda Civic Hybrid: 49/51
3. Toyota Camry Hybrid: 40/38
4. Ford Escape Hybrid FWD: 36/31
5. Toyota Yaris (manual): 34/40
6. Toyota Yaris (automatic): 34/39
7. Honda Fit (manual): 33/38
8. Toyota Corolla (manual): 32/41
9. Hyundai Accent (manual) and Kia Rio (manual) – both: 32/35
10. Ford Escape Hybrid 4WD and Mercury Mariner Hybrid 4WD both: 32/29

For information on what to look for on 2007 model year stickers, see "Guide to a Clean-Air Ride" on our website at www.OurAir.org.



APCD Board Calendar

Board of Directors

- Supervisor Salud Carbajal
First District
Santa Barbara County
- Supervisor Susan Rose
Second District
Santa Barbara County
- Supervisor Brooks Firestone
Third District
Santa Barbara County
- Supervisor Joni Gray
Fourth District
Santa Barbara County
- Supervisor Joe Centeno
Fifth District
Santa Barbara County
- Councilmember Russ Hicks
City of Buellton
- Councilmember Donna Jordan
City of Carpinteria
- Mayor Lupe Alvarez
City of Guadalupe
- Councilmember Will Schuyler,
Vice Chair
City of Lompoc
- Mayor Marty Blum
City of Santa Barbara
- Councilmember Marty Mariscal
City of Santa Maria
- Councilmember Edwin Skytt
City of Solvang
- Councilmember Margaret A. Connell, Chair
City of Goleta

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

December 21, 2006
Board of Supervisors'
Hearing Room
105 East Anapamu Street
Santa Barbara, California 93101

January 18
Board of Supervisors'
Hearing Room
511 East Lakeside Parkway
Santa Maria, California 93455

March 15
Board of Supervisors'
Hearing Room
511 East Lakeside Parkway
Santa Maria, California 93455

May 17
Board of Supervisors'
Hearing Room
511 East Lakeside Parkway
Santa Maria, California 93455

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.

Wheel of Change: Our Air, Our Earth

APCD is offering classroom presentations for 4th-12th grades with lessons on our atmosphere, air pollution, global climate change, and what we can do to make a difference. The



presentations can be tailored to the particular focus and grade level of the class and can include a game with the Wheel of Change at the end (the Wheel is pictured here with APCD Public Outreach intern Lexie Brown).

APCD is also inviting 6th Grade Earth Science Teachers to apply for grants to develop curricula incorporating lessons on our atmosphere, air pollution, and global climate change, as part of the Teachers Network program through the Santa Barbara County Education Office. The deadline for applications for this school year is December 1st.

To find out more about presentations and teacher grants, see "Kids and Teachers" on our website at www.OurAir.org. To schedule a presentation, or to invite APCD to attend your school or community event, contact Mary Byrd at byrdm@sbcapcd.org, or 961-8833.



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Santa Barbara, CA 93110-1315
- Business Assistance**
(805) 961-8868
- Daily Air Quality Report**
www.sbcapcd.org
- Complaints/Public Information**
(805) 961-8800
- World Wide Web**
www.sbcapcd.org
- E-Mail**
apcd@sbcapcd.org

On the Air is a quarterly 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.



Printed on 100% recycled paper.

2006 Green Award Winners Honored

Winners of the 2006 Green Awards, announced in September, include a resort hotel, landscape architecture and construction firms, a hospital, and a school. Since 1993, the Green Award Consortium has honored more than 60 companies in the county for outstanding environmental efforts. The Consortium is made up of APCD, the Santa Barbara County Resource Recovery & Waste Management Division of the Public Works Department, Community Environmental Council, Santa Barbara County Water Agency and SBCAG Traffic Solutions.

Ernst von Weizsäcker, Dean of the Bren School of Environmental Science and Management at the University of California at Santa Barbara congratulated the winners at the event held in their honor. Von Weizsäcker, a former member of the Bundestag, the German parliament, and former policy director at the United Nations Centre for Science and Technology for Development, shared an international perspective with the group.

In the past, he noted, there has been a sense that countries go through a progression from

economically poor but environmentally clean, to better off economically but also more polluted, and then finally to being prosperous enough to be able to institute pollution regulations and be both economically well off and environmentally clean. "The trouble is," he remarked, "today's environmental problems don't follow that scheme. Greenhouse gas emissions, over-consumption of water and energy, and production of waste – these are largely the actions of the richest countries." He added, "We have to reinvent wealth as something that's ecologically sustainable. Now that's quite a problem."

He referred to the need to find a new language for the discussion of environmental issues, and to describe them in ways that stress economic benefits: "For example, rather than talk about 'energy savings,' I prefer to say 'energy productivity' – extracting the same amount of economic wealth from a single barrel of oil rather than several barrels."



Ernst von Weizsäcker, Dean of the UCSB Bren School of Environmental Science and Management, speaking at the 2006 Green Award luncheon.

He also stressed the importance of education, remarking, "Education is at the core of any transition to a sustainable future. And in a sense, all of the Green Award winners here – past and present – are educators. I congratulate you all."

Honored this year with Green Awards were: the Four Seasons Resort "The Biltmore" in Santa Barbara; Marian Medical Center in Santa Maria; NWA, Inc. – Landscape Architecture &

Construction in Santa Barbara; Van Atta Associates (landscape architecture) in Santa Barbara; and The Family School in Los Olivos.

The Biltmore received an award for a range of environmental achievements, including actions that culminated in ISO 140001 certification for the hotel in 2005. This certification reflects a rigorous and comprehensive commitment by a business to minimize harmful impacts on the environment, and to achieve continual improvement of environmental performance. Drew Clarke, Director of Learning and Development at the Biltmore, said, "This certification – and the Green Award – mean a lot. We as a company typically make decisions based on three things: people, product, and profit. Now there's a fourth element we include. We address the question: 'how will this action impact the environment?'"

Clarke, noting that the Biltmore is the first hotel out of seventy-two in the hotel group to receive the certification, remarked, "We're really excited to say that this began in Santa Barbara."

At the event the tradition of past winners introducing the new winners continued. Jay Sullivan, Director of Maintenance, Operations, and Transportation for 2005 Green Award winner Goleta Union School District congratulated 2006 winner Marian Medical Center: "Marian is one of the top ten hospitals in California for the way they

APCD's Business Assistance Program



Our Business Assistance Representatives offer help to businesses over the phone and by email, and we also provide educational site visits to help owners understand and comply with our rules and requirements. The site visits are educational, not regulatory, and are conducted by a business assistance representative, not an APCD inspector. A site visit can help business owners: understand and comply with our permit conditions, rules and record keeping requirements; learn about new regulations that might be coming up; and find out about ways to prevent pollution.

Find out more:

Visit this page on our website: www.sbapcd.org/biz/business.htm
Call the Business Assistance Line at 961-8868, Email business@sbapcd.org.

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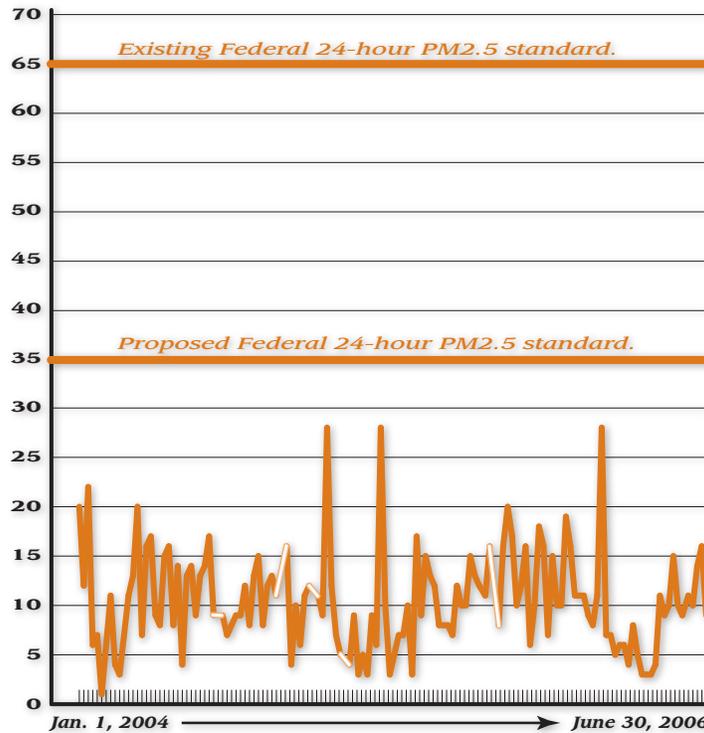


Particle Pollution – Proposed Revisions to Federal Standards

Particle pollution, also called particulate matter or PM, is a complex mixture of extremely small particles and liquid droplets suspended in the air. When inhaled, the particles can lodge in the deepest and most sensitive areas of the lung, and can aggravate many respiratory illnesses including asthma, bronchitis, and emphysema. High levels of particle pollution have also been associated with a higher incidence of heart problems, including heart attacks.

For health reasons, we are most concerned with inhalable particles less than 10 microns in diameter (PM10), and particles less than 2.5 microns in diameter (PM2.5). These particles can vary greatly in shape and chemical composition, and can be made up of different materials such as minerals, metals, soot, smoke, and dust. PM standards have been adopted for 24-hour measurements of these two sizes of particles, and also for annual average levels of these two sizes of particles. Our county's air currently meets the federal PM10 standards, and does not meet the state PM10

Santa Barbara Station PM2.5 Data
24-hour Samples – Micrograms per Cubic Meter



The graph above shows PM2.5 data in 24-hour samples from the Santa Barbara monitoring station. The U.S. Environmental Protection Agency has a proposed a new 24-hour standard for PM2.5. California does not have a separate 24-hour standard for PM2.5; the state's annual PM2.5 standard, and the state's PM10 standards are more health-protective than the federal standards.

standards. Additional data are necessary to determine whether our air meets the state or federal PM2.5 standards.

Recently the U.S. Environmental Protection Agency (USEPA) proposed changing the 24-hour PM2.5 standard from 65

micrograms per cubic meter to 35 micrograms per cubic meter. California does not have a separate 24-hour standard for PM2.5. USEPA proposed retaining the existing 24-hour PM10 standard at 150 micrograms per cubic meter (the state's standard is 50 micrograms) and revoking the annual PM10 standard, currently set at 50 micrograms per cubic meter (the state's is 20 micrograms). These proposed federal revisions are scheduled to be effective on December 18, 2006.

To view real-time PM2.5 data from the Santa Barbara and Santa Maria monitoring stations, updated hourly, see "Today's Air Quality" on our website at www.OurAir.org.

Green Award Winners (Cont'd)

manage their waste stream. They have a culture there that supports a range of environmental activities." This is the second Green Award for Marian; since its 1999 win, the hospital has eliminated the use of mercury-containing equipment, diverted 207,960 pounds of green waste, implemented a program to prevent expired medicines from

going into wastewater, and instituted a range of other recycling, and energy-conserving and water-conserving programs.

Accepting the award, Craig Miller, Vice President of Professional Services praised Sister Janet Corcoran at Marian as "the heart and soul of our program," and noted that a system for the hospital to use methane from a

nearby landfill to produce electricity for the hospital is in the works. Set to come online in January, the system will be able to meet from 50 to 100 percent of the hospital's power needs.

For more information on the Green Award, see www.greendifference.org

Backup Diesel Generators Need Permits

Diesel soot is considered the number one airborne carcinogen in California. Backup diesel generators powered by an engine rated greater than 50 bhp must have a permit from the APCD. This includes residential generators.

All the information is available online at www.OurAir.org (hit the link on the home page for "Backup Generators"). Or just contact Kaitlin Ergun at 961-8855 (kee@sbcapcd.org) or Mike Goldman at 961-8821 (mfg@sbcapcd.org).