Sequoia smog damaging pines, redwood seedlings

By Tracie Cone, Associated Press
In the Fresno Bee, S.F. Chronicle and other papers, Monday, May 28, 2012

SEQUOIA NATIONAL PARK, Calif. -- On a clear day, the view from Beetle Rock in Sequoia National Park extends west for 105 miles across the patchwork of crops in California's agricultural heartland to the Coast Mountains and the Pacific Ocean beyond.

The problem is there are few clear days, even at 6,200 feet.

The Sierra Nevada forest that is home to the biggest and among the oldest living things on earth - the giant Sequoia redwoods - also suffers a dubious distinction. It has the worst air pollution of any national park in the country.

Mountaintops that should offer awe-inspiring views of California's geologic grandeur often are muddled by a disorienting gray soup of smog.

"Ozone levels here are comparable to urban settings such as LA," said Emily Schrepf of the nonprofit advocacy group the National Park Conservation Association as she beheld the diminished view. "It's just not right."

This is not the place to take in a whiff of fresh mountain air. Smog is so bad that signs in visitors centers caution guests when it's not safe to hike. The government employment website warns job applicants that the workplace is unhealthy. And park workers are schooled every year on the lung and heart damage the pollution can cause.

Ozone also is to blame for weakening many stands of the park's Jeffrey and ponderosa pines, leaving telltale yellowing of their long needles. Instead of absorbing carbon dioxide, they soak up ozone through the stoma in their needles, which inhibits photosynthesis. Ozone also stresses young redwood seedlings, which already face challenges to survival.

Although weakened trees are more susceptible to drought and pests, the long-term impact on the pines and on the giant redwoods that have been around for 3,000 years and more is unclear.

"It's not a great story to tell, but it's an important story to tell because you can look at us as being the proverbial canary in a coalmine," said Annie Esperanza, a park scientist who has studied air quality there for 30 years. "If this is happening in a national park that isn't even close to an urban area, what do you think is happening in your backyard?"

It's a problem in a handful of the nation's 52 parks that are monitored constantly for ozone, including Joshua Tree National Park in California's Mojave Desert and North Carolina's Great Smoky Mountains National Park, which is ringed by power plants and several major highways including Interstate 40, a major tractor-trailer shipping route. But none is in the ballpark with Sequoia and its neighbor, Kings Canyon.

Under the Clean Air Act, the region that encompasses Sequoia and Kings Canyon national parks has been designated a "Class 1 air shed," which means by 2064 it must have pure air with no degradation of visibility. But that apparently didn't take into consideration its proximity to one of the worst air quality basins in the country.

"It does take visitors by surprise," Esperanza said. "On a day it's unhealthy, we ask people if you're going to do a rigorous hike, we recommend early morning. It's limiting, it's quite telling, and it's very sad."

While forest fires create some pollution, the lion's share comes from the San Joaquin Valley, the expanse of farmland that is home to the California's two busiest north-south trucking highways,

diesel freight train corridors, 1.7 million dairy cows, food processing plants and tens of thousands of diesel tractors plowing dusty fields. Its trough shape traps pollutants, and high-pressure systems act like a lid on a pot.

Smog is created when the sun's rays hit pollutants such as oxides of nitrogen and volatile organic compounds that are in motor vehicle exhaust, solvents, pesticides, gasoline vapors and decaying dairy manure.

"There is no simple answer to ozone pollution," said Thomas Cahill, a researcher at the University of California, Davis who studies air problem in Sequoia and across California.

Breathing ozone at high levels for even a short time can blister the lungs like UV rays blisters skin, scientists agree. The problem in quantifying exposure levels, however, is that some people suffer pulmonary damage at lower doses than others.

Dr. David Lighthall, health science adviser for the San Joaquin Valley Air Pollution Control District, says ozone levels at high altitudes don't drop at night like they do in the valley, which leads to "more cumulative exposure for those who live and work there."

Southerly breezes from the San Francisco Bay collect pollutants and push them to the valley's southern rim, where they bounce back north. Between Fresno and Visalia - just below the park - the warm air hits the cooler air pushing south and gets trapped in a swirling vortex called the Fresno Eddy. The warm, polluted air then rises up the canyons of three rivers that begin in the park.

The only way to improve air in the park is to improve the San Joaquin air basin, something that so far has proved elusive given the myriad sources. Even with hundreds of millions of dollars spent to retrofit diesel engines and replace gasoline lawnmowers with electric ones, residents pay a federal fine for the region's failure to meet even minimal EPA ozone limits.

"We don't create a disproportionate amount of pollution; it's just that we have these natural challenges so that the pollution we do create can take literally weeks or months to clean out. It just builds up over time," said Jaime Holt, spokeswoman for the valley air district.

Already this year, the level of ozone in Sequoia park has exceeded federal health standards, even though it's early in the summer ozone season. During the June-to-September summer season last year, the park violated the National Ambient Air
Quality standard at least 87 times, compared with 56 at Joshua Tree and 12 at Great Smoky Mountains.

"It's tragic that the National Park Service is known for clean air, and then you see a sign saying it's unhealthy to breathe," Esperanza said. "It's so contrary to the national parks idea."

List of US national parks with highest smog levels

The Associated Press
In the Fresno Bee, S.F. Chronicle and other papers, Monday, May. 28, 2012

FRESNO, Calif. -- Sequoia National Park, home to the giant redwoods, suffers the worst air pollution of any national park in the country. Here are the parks in the National Park Service system with the highest smog levels and the number of days monitors recorded violations last year:

- Sequoia National Park, Calif.: 87.
- Joshua Tree National Park, Calif.: 56.
- Great Smoky Mountains National Park, N.C.: 12.
- Yosemite National Park, Calif.: 8.
- Rocky Mountain National Park, Colo.: 8

- Big Bend National Park, Texas: 7.
- Mojave National Preserve, Calif.: 6

An ozone reading of 75 parts per billion or higher, which the EPA says is "unhealthy for sensitive groups," is considered a violation of the agency's regulations. The following parks exceeded that level in 2011:
- Sequoia National Park, Calif.: 98 ppb (unhealthy for everyone)
- Joshua Tree National Park, Calif. 91 ppb (unhealthy for everyone)
- Great Smoky Mountains National Park, N.C.: 83 ppb (unhealthy for sensitive groups)
- Big Bend National Park, Texas: 80 ppb (unhealthy for sensitive groups)
- Yosemite National Park, Calif.: 79 ppb (unhealthy for sensitive groups)
- Mojave National Preserve, Calif.: 78 ppb (unhealthy for sensitive groups)
- Rocky Mountain National Park, Colo.: 77 ppb (unhealthy for sensitive groups)

High-speed rail construction will give Valley's bad air a big bump before reductions take hold

By Tim Sheehan, staff writer
The Fresno Bee, Sat., May 26, 2012

Backers of California's proposed high-speed rail system frequently tout the long-term air-quality benefits of getting people out of cars and planes and onto electric-powered trains.

But any reductions in air pollution won't start for at least a decade, when the trains would start carrying passengers between Merced and the Los Angeles Basin. Meanwhile, building the system in the San Joaquin Valley is expected to pump tons of dust, greenhouse gases and other pollutants into the air. International experts warn it could take years for the benefits of train ridership to make up for the harm caused during construction.

The California High-Speed Rail Authority expects to pay millions of dollars to make up for construction emissions in the Valley.

"Building in an emissions-free manner is not possible, of course," said Lisa Marie Burcar, a spokeswoman for the rail authority. "But offsetting those emissions to result in the same outcome is."

In its environmental impact report for the Merced-to-Fresno section -- one of the first portions of the statewide train system planned to be built -- the rail authority allows that "construction ... has the potential to cause temporary and significant localized air quality impacts" on the Valley's air between 2013 and 2022.

Work would include demolition, land grading, earthmoving, pouring concrete, building stations and laying tracks.

All that work, and the equipment used to do it, are expected to produce reactive organic compounds and nitrogen oxides -- two chemicals that mix in the atmosphere to create ozone -- as well as dust and carbon dioxide and other greenhouse gases.

The pollution anticipated from high-speed rail construction would be a small fraction of emissions already generated in the region. But in the Valley, already struggling to meet state and federal air-quality standards, any extra pollution is a major worry, said David Barber, of the San Joaquin Valley Air Pollution Control District.

Construction pollution not only has "dire consequences" for healthy air, but it threatens the San Joaquin Valley's ability to comply with federal mandates under the federal Clean Air Act, Barber told rail-authority board members this month in Fresno.

The Valley faces several deadlines over the next 11 years to meet standards for ozone and fine particles, called PM-2.5. PM-2.5 is made up of dust and other particles that are 2.5 microns in size or smaller. A human hair, by comparison, is between 50 and 70 microns in thickness.

Barber said failure to reach those standards will have "dramatic and potentially devastating consequences in the form of federal sanctions on the Valley." Penalties could include severe limits on industrial development and the loss of billions of dollars in federal highway funds.

The rail authority outlined steps it will take to limit air pollution. Contractors will have to use the cleanest possible machinery; and trucks, for example, will have to be newer models. Temporary concrete plants will have to be at least 1,000 feet from daycare centers, schools, hospitals, senior-care centers, homes or parks.

Even so, the authority admits emissions would be significant, so it promises to give the Valley air district money to reduce emissions from other sources to offset rail building pollution.

"The air district strongly believes this is the right approach, given the seriousness of air-quality concerns in the Central Valley," Barber told the authority's board.

Burcar said the authority will include similar requirements in the upcoming environmental report for the Fresno-Bakersfield section. In all, the agency estimates it will spend $10 million to $20 million to counter pollution.

Some of that money could go to the air district's incentive programs, which include helping homeowners replace gas-powered lawnmowers with low-cost electric ones, and helping businesses, farmers and industries replace or upgrade trucks and machinery, said Samir Sheihk, the district's director of strategies and incentives.

"Those programs are always oversubscribed -- there's always more demand than we have money for," Sheikh said.

In Spain, where high-speed trains have been running for 20 years, some experts said it can take decades for high-speed rail to make up for environmental damage from construction.

High-speed trains "might be green, [but] don't take it for granted," said Germà Bel, a professor of political economics at the University of Barcelona and a former deputy in the Spanish parliament. "Because there is a lot of environmental damage while the construction is on.

"The story does not begin the day that high-speed lines begin service: The story with the environment begins the day on which the first work began."

Disregarding the construction effects "gives the environmental effects of high-speed rail a kind of mythological value," he said.

To make up for construction impacts, a high-speed train line must attract enough people from cars and planes.

"If you have a new line with huge demand, it might be environmentally friendly -- at a huge cost," Bel said. "If you have medium use of such a line, you take about 30 years to recover the environmental damage done because of construction. If the usage is low, you actually have a very bad effect on the environment.

"The point with high-speed rail is whether you get dozens of millions of trips [per year]. It's very demanding, and it's not the case with any single line in Spain."

Rail officials in California say they'll do such a good job of offsetting pollution while the system is built, there will be nothing to "make up or pay back" by the time the trains would start carrying passengers in 2022.

"Long-term, therefore, the project will improve air quality in the Central Valley."

Effort tracks carbon footprints

Students run numbers for agencies in region

By Garth Stapley, staff writer
Modesto Bee, Monday, May 28, 2012

Knowing how much energy you use and how much methane and exhaust you produce is the first step to living greener.

That's the theory behind Green Communities, a public-private effort to nudge cities and counties to act friendlier toward Mother Nature.

College interns dispatched by the Modesto-based Great Valley Center have inventoried the carbon footprints of Stanislaus County and its cities and are reaching out to other agencies. Analyses in free reports serve as a starting point for figuring out how to reduce greenhouse gas emissions.

"These assessments help them develop strategies and plans to become more energy-efficient," said Bryce Dias of the Great Valley Center.

Kristin Doud, assistant county planner, said interns gathered information from county vehicles and buildings on fuel and energy use, refrigerants and even fire extinguishers. They also looked at landfill waste to calculate methane production affecting the atmosphere.

By state law, all agencies eventually must come up with climate plans. Green Communities helps set targets, Dias said.

"Any data collection is a good idea," Doud said. "It's important to make decisions with knowledge behind them."

Last year, interns with colleges in Turlock, Merced, Stockton, Davis and San Diego surveyed the county's nine cities and Livingston, sizing up more than 2,000 tons in waste and 108,000 metric tons of carbon dioxide, among other things.

This year, Green Communities is taking on 14 more agencies, including Stanislaus, San Joaquin and Merced counties as well as Manteca, Tracy, Lodi, Atwater, Gustine, Dos Palos, Los Banos and some agencies in Kern County.

"The experience was painless and cost-free," said Donna Kenney, Livingston's community development director, in a release.

Thom Clark, the community development director in Hughson, said the analysis "provides us with a needed tool" for greenhouse gas reduction.

Green Communities is funded by utility customers throughout the state. The Great Valley Center was selected to work with Pacific Gas & Electric Co. to run the program in the Central Valley, with ICLEI-Local Governments for Sustainability providing training and software.

"It fits well within our mission to help jurisdictions make decisions to improve communities," said Dejeuné Shelton, Great Valley Center executive director.

Getting Serious About the “Other” Greenhouse Gases

By Jeremy Miller
KQED Climate Watch, Friday, May 25, 2012

Are we too focused on CO2?

While carbon dioxide reductions are at the heart of efforts in California to curb greenhouse gas emissions, state air regulators were reminded in a hearing on Thursday not to overlook a number of other “short-lived” greenhouse pollutants in meeting targets outlined under AB 32, the state’s Global Warming Solutions Act.

A panel of noted scientists was on hand, several from California universities and research labs, to discuss the effects of black carbon, methane and hydrofluourocarbons on regional and global climate. Short-lived pollutants such as these are estimated to comprise more than a third of overall global climate warming emissions. (Carbon dioxide, by comparison, makes up 56% of total global greenhouse emissions.)

“Since carbon dioxide represents the majority of greenhouse gas emissions and is long-lived, reducing carbon dioxide emissions is essential to meeting the climate program goals,” said California Air Resources Board executive officer James Goldstein. But since carbon remains in the atmosphere for centuries, Goldstein said, reduction efforts will be slow. “In contrast, the short-lived climate pollutants have a relatively short lifetime in the atmosphere, from a few days to a few decades. As a result, near-term efforts to reduce these pollutants can have a more immediate impact.”

Mark Jacobson, director of the Atmosphere/Energy program at Stanford University, pointed out that black carbon, or soot, commonly emitted in the burning of wood or diesel fuel, is a powerful absorber of infrared radiation, which it then re-radiates into the air around it. For an equivalent mass, said Jacobson, black carbon is more than a million times more potent than CO2 as an atmospheric warming agent.

But it’s not merely the “forcing” properties of black carbon that Jacobson says is concerning – it’s its ability to alter the reflectivity of things it lands on, such as polar ice caps and glaciers. “[Reducing black carbon] will be very important when we begin thinking about saving the Arctic sea ice, which is expected to disappear otherwise in the next 20 or 30 years,” said Jacobson.

Methane is also a key concern, especially with California’s large agricultural and energy sectors. (In the atmosphere, methane combines with nitrogen oxide and carbon monoxide to form tropospheric ozone, a pollutant and greenhouse gas.)

A key challenge pointed out by the panelists is that the sources of methane are still not well documented, particularly in the developing world. “The sources are not readily metered in the same way fossil fuel emissions are metered,” said Marc Fischer, a scientist at Lawrence Berkeley National Laboratory. He pointed to a previous study by the National Research Council that showed that regional estimates of methane emissions could be off by “as much as 100 percent.”

On Saturday, during a meeting at Camp David, leaders of the G8 nations announced that they were joining the U.S.-led Climate and Clean Air Coalition to Reduce Short-Lived Pollutants, established in February. According to Erika Sasser, a spokesperson with the EPA Office of Atmospheric Programs, Indian leaders have expressed concern about the intent of members of the coalition from developed nations, particularly those with cap-and-trade schemes that allow the purchase of offsets in developing countries.

“There is a feeling that the developed countries have not done what they should on CO2, and now they are turning their attention to short-term [pollutants],” Sasser said. She cautioned that reducing short-lived pollutants is not a substitute for long-term carbon dioxide emission reductions in the developed world.

In terms of short-lived pollutants, California has passed laws requiring inspections and limiting particulate emissions from diesel trucks and cars. Over the years, the air board has also adopted rules to limit hydroflurocarbons in air conditioners in trucks and cars and commercial cooling

systems. As for methane, the state has focused on, among other things, recapture of emissions from landfills and reductions from dairy operations.

Burning limits begin Monday

Modesto Bee, Saturday, May 26, 2012

Authorities will begin Monday morning to restrict debris-burning hours in rural areas of Tuolumne and Calaveras counties as well as eastern portions of Stanislaus and San Joaquin counties.

California Department of Forestry and Fire Protection officials said outdoor burning will be permitted from 7 p.m. to 8 a.m. with a valid burn permit on permissive burn days. Only burning clean, dry vegetation in a pile no larger than 4 feet by 4 feet is permitted. On July 1, all outdoor burning will be suspended.

Cal Fire reminded property owners to check the burn day status by calling the Air Pollution Control District in their area: (877) 429-2876 in Stanislaus and San Joaquin counties, (209) 533-5598 in Tuolumne County and (209) 754-6600 in Calaveras County.

Visalia Times-Delta and Tulare Advance-Register commentary, Sat., May 26, 2012:

Repairing potholes, cleaning the air

The Measure R funding "pie" approved by Tulare County voters in 2006 allocated 35 percent of funds to be used by the eight incorporated cities and Tulare County and 14 percent to be focused on environmental projects to help clean our air.

In its first five years, these portions of Measure R funding made possible the repair of potholes, engineering work on planned regional projects, expanded transit, new traffic signals, bike paths and safer routes to schools.

This funding also provided the local match required to secure state and federal funding. Without Measure R, these funds would likely have gone to another region that could afford the match.

The incorporated cities and Tulare County are planning for the future of Measure R and determining the best use of the local and environmental categories of funding. Following is a look at some of the projects expected to be funded through these categories of Measure R:

Visalia

Environmental funding will continue to support bike paths, safe routes to school improvements and transit improvements. Local funding will be used to support work on several key projects:

- Improvements to Burke Street (Roosevelt to Houston avenues).
- Improvements to Oak Avenue (Tipton to Burke streets).
- Traffic signals on Demaree Road and Goshen Avenue.
- Design and construction match for work on Akers Street and Highway 198 intersection improvements, which will include widening and new turn lanes.
- Begin design on improvements to Shirk Street from Highway 198 to Goshen Avenue.
- Begin design for extending Santa Fe Street from Houston to Riggin avenues.

Dinuba

Dinuba's local funding goes to payments on a bond that funded improved street surfaces throughout the city. The environmental funding made possible a bus connection to Reedley College for Dinuba residents. Future plans include implementation of a bike plan.

Exeter

The key project for the city of Exeter's local funding is improvements to the portion of Avenue 280 (Caldwell Avenue/West Visalia Road) that runs through Exeter. The project will result in a four-lane road with raised median, curb, gutter and sidewalk. Construction is anticipated in 2013.

Farmersville

Widening and improving Farmersville Boulevard is the main focus of local Measure R funding. The city is setting aside funding and planning toward this significant improvement.

Porterville

The city's local funding is focused on the rehabilitation of road surfaces. Without R funding, the city would have been forced to bond the work or accept a lesser-quality road surface because no funds would be available.

The signature project for the city's environmental category is the final phases of the Measure R-funded Tule River Parkway, a 4-mile bike and pedestrian parkway featuring asphalt walkway, landscaping, lighting and benches.

Measure R will also make possible continued enhancements to Porterville Transit.

Tulare

Street maintenance continues to be the primary focus for local funds, along with projects such as the construction of a new street, Morrison Street, between Bardsley and Alpine avenues; in-roadway crosswalk lighting at the Santa Fe Trail crossing of Laspina Street; and shoulder stabilization along Pratt Street.

Environmental funds will be used to install a traffic signal at Cross Avenue and Mooney Boulevard. Measure R also makes possible a continued increase in transit service.

Woodlake

The local funding for Woodlake will focus on the design and development of a roundabout project at Valencia and Naranjo boulevards.

A downtown enhancement project will be developed, adding trees, sidewalks, wheelchair ramps and landscaping. This project will be funded in part by environmental category funds.

Tulare County

Local funding is used to help maintain the county's 3,057-mile road system. About $2 million is received each year in this funding category, which makes possible the rehabilitation of about 24 miles of roads each year.

The environmental portion of R will provide matching funds for safe routes to schools pedestrian projects. These include the installation of traditional signs and flashing beacons to draw attention to crosswalks and speed feedback signs that tell drivers their speed.

Measure R funding will also help support the development of "Share the Road" signs and educational materials to help make Tulare County safer for bicyclists. Measure R also makes possible continued improvements to transit service, including on weekends.

Public input into the allocation of Measure R funding is welcome. The Citizens' Oversight Committee meetings are open to the public, as are the monthly Tulare County Transportation Authority meetings. For information on Measure R, visit tcmeasurer.com.

Stephen Tootle is a member of the Citizens' Oversight Committee, representing environmental concerns.

Sacramento Bee commentary, Sunday, May 27, 2012:

Can market for clean-air credits resist profiteers?

By Dan Morain

A promise of big money has a way of quieting nagging questions.

So it is with California's cap and trade program. The Air Resources Board is pressing ahead with the creation of a market to begin reducing greenhouse gas emissions. Answering doubters, the ARB estimates the state will receive $1 billion a year in revenue.

In this cash-strapped state, many interests have their hands out. Environmentalists see ways to fund their projects, legislators hope to use it to pay for their favored programs, and Gov. Jerry Brown envisions using the money to help to build high-speed rail.

True believers see cap and trade as the key to implementing AB 32, the landmark 2006 legislation intended to combat climate change. But it also is a gamble, one that could sidetrack the state from other important though less flashy efforts to reduce greenhouse gas emissions.

In concept, cap and trade is simple enough. The Air Resources Board has identified 600 sources of air pollution in the state and has determined what their emission levels ought to be. That's the "cap."

Say an oil refinery exceeds its emission cap. The oil company could cut emissions or, more likely, buy credits from owners of other sources of pollution who fall below their caps, or offset pollution from its refinery by, say, paying to protect forest land.

The reality will be anything but simple when the opening auction takes place in November, unless you happen to be a sophisticated energy trader, or one of the high-end lobbyists, consultants and ARB officials who have spent the past six years devising the system.

Initially, California hoped to create the market with Western states including Oregon, Washington, Arizona and New Mexico. One by one, they dropped out. Now California has linked not with another state, but with the Canadian province of Quebec.

To create the market, the ARB established the Western Climate Initiative Inc., a nonprofit corporation based in Delaware. Its mission includes setting up the cap and trade auction, policing the market against manipulation. The state will take its cut from the trades.

The nonprofit's board consist of six members for now. Two are high-ranking ARB officials. The others are from Quebec and, oddly, British Columbia, which is not yet part of the cross-border compact.

Because cap and trade involves money, Wall Street is involved. The Environmental Markets Association is a trade group composed of lawyers and energy traders seeking a piece of the business. Its members include Goldman Sachs, which made a killing from the housing bubble and mortgage-backed securities and derivatives, financial instruments that led to the crash of 2008.

All along, the Legislative Analyst's Office has been issuing warnings. In an extraordinarily blunt critique last June, the analyst noted that there would be no fewer than three markets where emissions and offsets would be traded, including a primary market, a spot market, and a derivatives market in which contracts would be swapped as hedges and investments.

"Carbon markets are, by their very nature, complex. In general, the more complex the markets are, the more challenging it will be to regulate them, and the more susceptible they become to manipulation and fraudulent activity," the analyst wrote, adding that "the cap and trade system as designated by ARB is particularly complex."

The California Air Resources Board has a well-deserved reputation for being an innovative regulator. Over the decades, its rules have helped reduce smog and pushed automakers to produce more efficient vehicles.

The board has environmental credentials, but, the legislative analyst noted, "has no experience in regulating such markets and its lack of technical expertise and institutional knowledge of such matters increases the chance that market manipulation could go undetected."

ARB chairwoman Mary D. Nichols disputes that assessment, saying, "Cap and trade is very simple." Similar systems have operated for decades in other contexts. Cap and trade works in Europe and in Northeastern states.

"I think we have a pretty good sense of what can go wrong," she said.

A few legislators aren't quite so certain.

In a budget subcommittee hearing last month, Sen. Jean Fuller, a Republican who represents the oil patch in Kern County, asked a series of hard questions about cap and trade. Unable to get sufficient answers, she sent a letter last week asking for answers in time for another hearing on Wednesday.

The board didn't respond.

Fuller doubts the wisdom of AB 32, and is a Republican in a town dominated by Democrats. But state agencies ignore any senator's request at their peril. Last week, she pushed for an audit of cap and trade, and Sen. Joe Simitian, a Silicon Valley Democrat and subcommittee chairman, agreed.

"The last half-dozen years make us all a little nervous about market mechanisms that are complex beyond comprehension," Simitian said later.

Cap and trade does have a familiar feel. Back 1996, the Legislature approved a bill to deregulate energy. Then, the promise was that there'd be competition among electricity providers, and rates would fall by up to 20 percent.

Then-Sen. Steve Peace helped write the legislation, and remembers the fallout. Enron and other buccaneers manipulated the deregulated market. The state had rolling blackouts. Traders made millions. A few went to jail. Others remain in the business, and will be involved in cap and trade.

Peace predicts cap and trade markets will "work for a while, and then comes the moment. The moment is when the traders get the opportunity to cash in. The moment comes because these guys will make a lifetime's income in that moment."

Nichols doesn't see it that way: "This is not restructuring the electricity system. We're not effecting changes in the way business operate. We're just getting them to think about carbon emissions."

I hope she's right. But let's recap: California has an alliance with Quebec to create a market in which emission credits will be bought and sold, overseen by a nonprofit headquartered in Delaware. Goldman Sachs will be involved. What could possibly go wrong?