

Court orders EPA to reconsider soot threshold

By DINA CAPPIELLO, Associated Press Writer

Modesto Bee, N.Y. Times, S.F. Chronicle and other papers, Wednesday, February 25, 2009

WASHINGTON — A federal appeals court is pressing the Environmental Protection Agency for a better explanation of how the Bush administration's limit on the amount of soot and dust allowed in the air protects public health.

The court returned the standard to the EPA on Tuesday, arguing that the agency's explanation was inadequate. The decision in the long-standing controversy found soot limits by the Bush administration unjustified, leaving it up to the Obama administration to set new ones.

More than a dozen states, along with environmental groups, sued the EPA seeking to lower the standard, contending that the Bush administration ignored science and its own experts when it decided in 2006 not to lower the nearly decade-old annual standard. The agency's own analysis found the lower standard recommended by scientific advisers would have prevented almost 2,000 premature deaths each year.

The U.S. Court of Appeals for the District of Columbia ruled that the EPA failed to adequately explain, in view of the risks, why its standard was sufficient to protect public health. The court also found the agency had acted unreasonably and contrary to the law when it set the secondary standard - aimed at protecting the public from haze - at the same level.

The appellate judges stopped short of vacating the current standards, saying the defect in the agency's reasoning was curable and that even a flawed standard was better than none to protect public health.

"This is a real chance for the EPA to get it right, and to set standards that are truly based on the need to protect people's health," said Frank O'Donnell, president of the advocacy group Clean Air Watch.

The EPA said it would review the decision to ensure that science and the law are followed.

Soot is comprised of microscopic particles released from smokestacks, wood-burning stoves and automobiles that contribute to haze and can burrow into lungs. Breathing in soot can cause lung and heart problems.

The court's decision is the latest in a series of legal opinions that have found problems with Bush administration air pollution policies.

Last year, an appeals court ruled that a Bush plan to control mercury pollution at the nation's coal-fired power plants violated the law by allowing utilities to purchase emission credits instead of actually reducing emissions. The Obama administration dropped the appeal of that case and said it is working on its own plan to curb mercury emissions.

In July 2007, the court threw out the Bush administration's Clean Air Interstate Rule, which required 28 mostly Eastern states to reduce smog-forming and soot-producing emissions that can travel long distances in the wind. The court has since reinstated the rule while the EPA makes court-mandated changes.

House approves car emissions enforcement bill

The Associated Press

Contra Costa Times and Tri-Valley Herald, Wednesday, February 25, 2009

SANTA FE, N.M.—The House approved a proposal Tuesday to help enforce tougher vehicle emissions standards the state plans for new cars, light trucks and sport utility vehicles.

The legislation will allow the Motor Vehicle Division to refuse to register a vehicle that doesn't comply with emission requirements, which are to apply starting with 2011 model cars.

Those will become available to consumers next year.

The New Mexico Environmental Improvement Board adopted the standards in 2007 to mandate cleaner-burning cars and trucks to help fight global warming. The emissions requirements were first developed by California.

However, the standards are on hold—along with plans by New Mexico and a dozen other states to use the same requirements—while California waits for a federal waiver from the Environmental Protection Agency.

President Barack Obama's administration is expected to grant the waiver, which was denied by President George W. Bush's administration.

Without the proposed enforcement legislation, New Mexicans could buy a car in another state without the tougher emissions standards and register it New Mexico, said Rep. Mimi Stewart, D-Albuquerque, a sponsor of the measure.

By refusing to register vehicles that are not in compliance with emissions requirements, Stewart said, New Mexico will protect its air quality and help New Mexico-based auto dealers from losing sales.

The House approved the bill 52-9 and sent it to the Senate for consideration.

The vehicle emissions bill is HB291.

Carbon dioxide gets new life as it's recycled into gasoline

By Paul Davidson

USA Today, Wednesday, February 25, 2009

Carbon dioxide, the chief greenhouse gas, is public enemy No. 1 to environmentalists. CO₂ emissions from vehicle tailpipes have helped spawn a multibillion-dollar ethanol industry as the nation fights global warming and strives to import less foreign oil.

But at least a handful of companies and scientists are turning that battle on its head: They're finding ways to recycle CO₂ and turn it back into gasoline and other transportation fuels.

While their projects are in the early stages, researchers say they've tested their technologies in the lab and are poised to unveil prototypes that could lead to commercial rollouts in as little as two years. If successful, such initiatives could reduce dependence on carbon-spewing, petroleum-based products, as well as renewable fuels such as corn ethanol that compete with food supplies.

"Having a homegrown alternative to (oil) is an attractive proposition," says Jim Miller, a scientist at Sandia National Laboratories who's working on a CO₂-to-fuel project.

Scientists demonstrated years ago that CO₂ can be converted into liquid fuel by breaking it apart and combining the carbon atom with hydrogen. Those are the basic building blocks of hydrocarbons, such as oil and coal, and feed stocks such as corn and sugar cane.

The problem: CO₂ is very stable and can be split only under high temperature and pressure. That requires a lot of energy, which drives up costs. The start-ups are devising ways to unravel CO₂ using less energy.

Turbocharging their efforts: oil prices that were skyrocketing until recently, and a push in Congress to require utilities, oil refiners and others to pay fees for each ton of CO₂ they spew. Under legislation anticipated by next year, the industries would eventually have to curtail their emissions.

"There's just plentiful CO₂, and someone's going to be willing to supply it to us," says Derek McLeish, CEO of Carbon Sciences, one of the start-ups.

Running ahead

Carbon Sciences is furthest along in the CO₂-to-fuels quest. McLeish founded the company in 2006 as Zingerang, a mobile communications provider. But faced with a crowded wireless marketplace in 2007, he and other investors pivoted sharply from communications to carbon. They also changed the company's name, went public and raised \$2.5 million.

In June, company chief technology officer Naveed Aslam figured out a way to break down CO₂ at low temperature and pressure. His secret? Biocatalysts.

Although catalysts, such as enzymes and bacteria, can split CO₂, they're very expensive, and typically must be replaced after every reaction. Aslam invented a polymer shell that protects them so they can be recycled. The same technology can extract hydrogen from water, avoiding the need for energy-intensive hydrolysis. The carbon and hydrogen are joined to form methanol, which can be refined into gasoline or jet fuel.

Aslam believes catalysts can be reused up to several million times but can't be certain until a prototype is completed this quarter. Costs should be competitive with ethanol, which now wholesales for about \$1.65 a gallon, executives say.

Many companies are working to convert the hydrocarbons in algae and plant waste into biodiesel and cellulosic ethanol. But McLeish says, "Ours is the most direct path," and ultimately, quicker and cheaper.

Carbon Sciences likely would license its technology to oil refiners, which emit large amounts of CO₂ and have the expertise and infrastructure to produce gasoline, McLeish says. Other prospects include coal plants and concrete makers, which are big CO₂ producers and will likely have to install technology to capture it. Although CO₂ culled from such sources ultimately would be emitted through tailpipes, it would displace new oil, substantially reducing carbon emissions. McLeish expects a commercial deployment by 2011.

David Doniger, policy director for the Natural Resources Defense Council, says such technology would be better for the environment than burning new fossil fuels. But he would prefer to capture CO₂ from coal plants and store it underground — technology that's at least a decade away — and shift from gasoline-fueled cars to electric vehicles supplied by wind or solar energy.

Other CO₂-to-fuel approaches:

- Sunlight. Sandia lab researchers are tapping the sun's power to minimize energy use. They've invented a reactor containing a ceramic ring made of iron oxide and cobalt. A solar concentrator heats the ceramic material to 2,700 degrees Fahrenheit, forcing it to give up its oxygen. The ring then rotates to a colder chamber containing carbon dioxide. Having released its oxygen, the ceramic borrows oxygen atoms from the CO₂, leaving carbon monoxide only. The cycle repeats continuously.

The same process removes oxygen from water to produce hydrogen. The carbon monoxide and hydrogen are joined to make a synthetic gas, which can be turned into methanol or gasoline. A prototype is scheduled to be ready late this month.

- Wind. Morphic Technologies of Sweden has patented an enzyme to absorb CO₂ from the air. Wind-turbine blades, coated with the enzyme, generate a huge air mass as they spin. CO₂ sticks to the blades and is transported to the base of the turbine. There, excess energy from the wind turbines splits the CO₂ and water into carbon and hydrogen. Since it's scraping CO₂ from the air, Morphic could sell carbon credits to industries that must cut or offset emissions under expected greenhouse gas restraints, says CEO Martin Valfridsson.

Ahmed Ghoniem, an MIT professor of mechanical engineering, says CO₂-to-fuels projects are technically feasible but face high hurdles. "Can you scale it up to produce a sufficient amount of (fuel) so you can build a business around it? It's challenging."

Fleet of electric trucks is bound for Port of Los Angeles

By Ronald D. White

L.A. Times, Wed., February 25, 2009

The standing joke about the ports of Los Angeles and Long Beach used to be that they were like the diesel version of elephant graveyards: the place where old trucks went to die. But lately, they have become a proving ground for technology that produces little or no pollution.

On Tuesday, the first of 25 heavy-duty all-electric trucks rolled off a new Los Angeles assembly line. All are slated to work at the Port of Los Angeles or to make short hauls to and from the harbor. The small fleet results from a partnership involving the Port of Los Angeles, the South Coast Air Quality Management District and a small business called Balqon Corp.

For a vehicle that is going to be doing a lot of grunt work with rusty cargo containers, its coming out party was pretty splashy.

Los Angeles Mayor Antonio Villaraigosa was there for the unveiling of the Nautilus E30 and even took it for a short spin. He was joined by Los Angeles City Councilwoman Janice Hahn, Los Angeles Board of Harbor Commissioners President S. David Freeman and Santa Ana Mayor Miguel A. Pulido, who is a member of the air board.

The ports of Los Angeles and Long Beach have launched the nation's most ambitious port cleanup effort, which bans the oldest and dirtiest trucks and charges cargo fees to help fund the purchase of thousands of new clean diesel and natural gas trucks. The ports also have been offering seed money for promising new technologies.

The Nautilus E30 has a range of 40 miles (under a full load) to 60 miles (when not hauling). It powers up by plugging into a 230-volt or 480-volt charger for about three hours.

Balqon Chief Executive Balwinder Samra received \$527,000 from the L.A. port and the air board to fund development of the electric truck. As part of the deal, Samra moved his company from Orange County to Harbor City, near the port, and he will pay a royalty of \$1,000 to the port and the air board for every truck he sells that isn't used at the port.

"We had made equipment for trucks and buses before, but we could never afford to build a whole truck before this," Samra said. "Now, we've proven we can do it."

E.P.A. Is Told to Reconsider Its Standards on Pollutants

By Cornelia Dean

N.Y. Times, Tuesday, February 24, 2009

Bush administration standards for pollutants like soot are "contrary to law and unsupported by adequately reasoned decisionmaking," a federal appeals court said Tuesday.

The court ordered the Environmental Protection Agency to reconsider its standards for the pollutants, fine particulates, which are linked to premature death from lung cancer and heart disease and to other health problems including asthma.

When the agency embraced the standards in 2006, its own scientific staff rejected them as too lax. In Tuesday's ruling, the United States Court of Appeals for the District of Columbia Circuit said the agency "did not adequately explain" why the standards were adequate.

The decision is “a victory for the breathing public,” said Paul Cort, a lawyer with Earthjustice, who argued the case for environmental groups. The legal effort was joined by health organizations and more than a dozen states, including Connecticut, New Jersey and New York.

In a statement, the E.P.A. said only that the standards for particulate matter are “extremely important” and that the Obama administration would review the matter “to ensure that the science and the law will be properly followed.”

Researchers have drawn direct and immediate links between ambient levels of fine particulates and hospital admissions and deaths. By some estimates, tens of thousands of Americans die each year from exposure to airborne particulates.

Among other sources, fine particulates come from diesel engines, power plants, certain industrial processes and even fireplaces. Perhaps one-thirtieth the diameter of a human hair, they can make their way deep into the lungs and in some cases even into the bloodstream.

These pollutants are regulated under the Clean Air Act, but there is no generally agreed safe level of exposure. So in some ways, setting standards is a value judgment more than a scientific decision.

In 2006, agency scientists and almost all the members of its Clean Air Scientific Advisory Council recommended that the standard for long-term exposure be lowered to 12 to 14 micrograms per cubic meter of air, from 15. But the agency’s administrator at the time, Stephen L. Johnson, said there was “insufficient evidence” linking the particulates to health effects.

In a statement in response to Tuesday’s decision, State Attorney General Andrew M. Cuomo of New York said it “could result in preventing hundreds of premature deaths just in the New York City area annually.”

It could also save “hundreds of millions of dollars” in health care costs, Mr. Cuomo said.

Ambient levels of fine particulates vary by place, season and weather. The Clean Air Act divides the nation into so-called airsheds, and regions that consistently violate air-quality standards are subject to penalties including, ultimately, the withdrawal of federal highway funds, Mr. Cort said.

The case decided on Tuesday also involved coarse particulates, like dust, and particulate contributions to haze. Agricultural groups had challenged the standards for coarse particulates as unnecessarily stringent, but the court rejected their view. And it said the E.P.A. must act to reduce the role of particulates in haze.

It was the second time in two days that the appeals court was in the news for overturning decisions made by the E.P.A. during the Bush administration. On Monday, the Supreme Court refused to consider a challenge to the lower court’s ruling against Bush-era standards on emissions of mercury and other pollutants from coal-fired power plants.

Mr. Cort said the appeals court had in recent years exhibited “an increasing level of distrust” for Bush administration regulations. But he rejected the idea that its recent decisions amounted to law-making.

“This was not an activist panel of judges here,” Mr. Cort said. Two of the three were Republican appointees, he said, “and this was a per curiam opinion, meaning unanimous.”

Environmentalists Advance on Emissions

By Cornelia Dean

N.Y. Times, Tuesday, Feb. 24, 2009

The Supreme Court cleared the way Monday for the Environmental Protection Agency to issue new regulations on emissions of mercury, lead, arsenic and other pollutants from the nation's coal-fired power plants.

Environmental groups hailed the action as a final blow to Bush administration efforts to frustrate tight regulation of the emissions, but any new Obama administration rules may draw their own court challenges.

The justices' action involved a suit brought by environmental organizations, Indian tribes and 14 states including New York, New Jersey and Connecticut. The suit charged that the Bush administration had acted improperly in trying to create a separate regulatory regime for the coal-fired plants rather than subjecting them to the general requirements of the Clean Air Act.

The groups prevailed last year in a lower court, but the Environmental Protection Agency in the Bush administration, with the support of industry groups, appealed the ruling to the Supreme Court. On Monday, the court declined to hear that appeal. Obama administration lawyers had filed papers seeking the appeal's dismissal.

Coal-fired plants produce about half the nation's electricity, but they are a major source not just of heat-trapping gases but of pollution as well. Mercury is a particular concern. While airborne concentrations are usually low, when mercury falls to earth it enters streams, rivers and estuaries and can accumulate in the form of methyl mercury in the flesh of fish.

James Pew, a lawyer for Earthjustice, a nonprofit environmental law firm that represented environmental groups challenging the Bush administration, said he hoped the Obama administration would quickly move to produce new regulations.

But Jeff Holmstead, the head of the environmental strategies group at Bracewell & Giuliani, a law firm that represents many utility companies, said "there's no way in the world" the court's decision not to hear the case was the end of the matter.

"If the administration does something aggressive, it will be challenged by the industry," said Mr. Holmstead, who in the Bush E.P.A. led efforts for the administration's alternate approach. "If they do something not aggressive enough, they will be challenged by environmental groups."

Plug-in cars could actually increase air pollution

By James R. Healey

USA Today, Wednesday, February 25, 2009

The expected introduction of plug-in hybrid electric vehicles could cut U.S. gasoline use but could increase deadly air pollution in some areas, two reports say.

That's because a plug-in's lower tailpipe emissions may be offset by smokestack emissions from the utility generating plants supplying electricity to recharge the big batteries that allow plug-ins to run up to 40 miles without kicking on their gasoline engines. Plug-ins, called PHEVs, are partly powered, in effect, by the fuel used to generate the electricity.

About 49% of U.S. electricity is generated using coal, so in some regions a plug-in running on its batteries is nearly the equivalent of a coal-burning vehicle. The trade-off is one that even plug-in backers acknowledge. It could undercut the appeal of vehicles that appear capable of using no gasoline in town and hitting 50 to 100 mpg overall fuel economy.

If large numbers of plug-in hybrids were being recharged with power from the least-sophisticated coal plants, "There is a possibility for significant increases of soot and mercury," says a report by environmental advocacy group Natural Resources Defense Council. Soot particles can make it hard to breathe, especially for asthmatics. Mercury is toxic.

"Plug-in hybrids are perhaps not good for all areas," says Howard Learner, executive director of the Environmental Law & Policy Center, a Chicago-based advocacy group. In "states that are heavily coal, that equation doesn't work out very well for the environment."

After PHEVs drain their stored energy, they operate like conventional hybrids, triggering their gasoline engines to help drive the wheels and recharge the batteries. Conventional hybrids can't be plugged in; their batteries are recharged only while driving.

The longer a plug-in is designed to operate on just the batteries, the less gasoline it uses, but the more electricity it needs to recharge the larger batteries.

Thus, the better the PHEV — that is, the longer it goes just on its batteries — the greater the charge required and the more the pollution that might result from an electric utility's power generation.

Learner calls PHEVs "really important emerging technology — where the cleaner technologies are used to charge them."

Sulfur dioxide also may be an issue

A study by the Minnesota Pollution Control Agency found plug-ins also could result in more sulfur dioxide (SO₂) emissions. SO₂ is toxic in large amounts and is a component of corrosive acid rain.

The Minnesota study found that use of PHEVs would lower most emissions compared with other vehicles, but that resulting SO₂ emissions would be more than double those from gasoline vehicles and about three or four times greater than from driving a regular hybrid. Exactly how much depends on how far the PHEV can run on battery power alone.

The Minnesota study also found that PHEVs would emit more carbon dioxide (CO₂) than driving a conventional hybrid. CO₂ is a greenhouse gas thought to contribute to global warming.

The Minnesota numbers are striking because they predict the big jump in SO₂ even if 40% of the state's electricity were generated by wind power, not coal or other polluting fuels. About 4% of the state's electricity now is from wind, according to state officials.

The state's PHEV study concludes: "Alternative vehicles offer benefits, but no single technology currently stands out as a clear choice."

The NRDC calculus shows that a plug-in charged from a power plant burning the dirtiest type of coal still has an overall pollution level less than a conventional gasoline car. But it would produce 11% more greenhouse gas emissions than a regular, non-plug-in hybrid, according to Luke Tonachel, vehicles analyst at the NRDC and co-author of the group's report on plug-ins. The report was produced jointly with the non-profit Electric Power Research Institute.

He says, however, that charging a plug-in with electricity from renewable resources — wind or water, for instance — cuts overall greenhouse gas emissions to as low as a conventional gasoline car getting 74 mpg. No current gasoline car does that.

The NRDC and Minnesota studies were published last year but have yet to trigger alarms. PHEVs still are experimental; their possible threat is distant.

"It seems a little premature to think of it being a problem — but there are a lot of issues we should have been thinking of sooner," says Charles Griffith, auto project director at the Ecology Center, an environmental non-profit based in Michigan. He cites as an example debate over use of land to grow crops for ethanol fuel vs. for food.

Even so, Griffith says, "The scenario where there are so many plug-in hybrids plugged into the (electric power) grid that you'll see a change in air quality just doesn't sound true to me."

Plug-ins may be on streets soon

Automakers say PHEVs could be on the streets in significant numbers within five years. Prototypes being tested by car companies suggest they should be able to go up to 40 miles on battery power, which could enable them to deliver average mileage in the neighborhood of 100 mpg in general driving.

The first plug-in vehicle in production, however, is likely to be General Motors' Chevrolet Volt, which is not a hybrid. Due in 2010 or 2011, Volt runs entirely on battery power. Like PHEVs, its battery pack can be recharged by plugging into a normal outlet, using electricity from a utility generating plant. A small gasoline engine recharges Volt's batteries when an outlet isn't handy, but unlike in a hybrid, that engine never directly powers the car. GM could sell 60,000 or more a year, forecasts consultant J.D. Power and Associates, if the price is \$30,000 or less.

GM said at the Detroit auto show in January that it also will produce a plug-in hybrid version of its Saturn Vue SUV near the same time Volt is to launch.

Toyota Motor and Ford Motor each showed a prototype plug-in hybrid at auto shows this year and will test the designs. "It will come," says Toyota's Jaycie Chitwood, senior planner at the automaker's advanced technologies unit in the USA. "It's more a question of 'when' than 'if.' "

Ford's Greg Frenette, chief engineer of zero-emission vehicles, says it should take no more than five years to decide if plug-ins can be made reliable and inexpensive enough.

The U.S. Energy Department is backing PHEVs.

In January it offered \$30 million for projects to "deliver up to 40 miles of electric range without recharging" and to make plug-ins "cost-competitive by 2014 and ready for commercialization by 2016."

"We look at plug-in hybrids as the next generation of hybrids. They run cleaner, they save oil and they can save consumers money at the pump," NRDC's Tonachel says. But, he says, "Until our oldest power plants are replaced or upgraded, there could be increases in local particulate matter and ozone."

El Dorado construction raises questions, concerns over asbestos

By Chris Bowman

Modesto Bee and Sacramento Bee, Wednesday, February 25, 2009

In El Dorado Hills' upscale Serrano community, a proposal to build 135 homes on a ridge bearing asbestos veins has raised neighborhood opposition along with difficult questions about the health risks of living near the fibrous minerals. Here's a primer on what scientists know – or don't know.

Does living in an area known to contain asbestos deposits increase the risk of lung disease?

Not necessarily. Locked in the Earth, the minerals pose no danger. But blasting, drilling, earth-moving and grading can disperse the minerals' fibers, especially in dry soil. The potential risk increases with the duration and intensity of exposure to the breathable fibers.

Why worry about asbestos in El Dorado Hills, when the fibers are known to be present in the air practically everywhere – the result of natural weathering and its widespread use in automotive brakes?

Western El Dorado County probably has more home and road construction churning up asbestos near residents than any other area of California, according to U.S. Environmental Protection Agency officials. Excavation work and even recreational activity in fields and trails with asbestos-containing soil can significantly increase an individual's exposure above the normal levels in the air, EPA studies show.

Can't the inhaled fibers be coughed up like dust?

Certain asbestos fibers can bypass the defenses and lodge deep into the lungs for life to cause cancer. Areas within and near the proposed Serrano development contain a type of asbestos called amphibole that is far less likely to dissolve in the lungs over time than the more common, commercially used chrysotile asbestos.

Doesn't it take years of asbestos exposure to develop lung disease?

Not necessarily for amphibole asbestos. Brief, episodic exposures – weeks, not years – are enough to trigger lung disease decades later. The "biopersistence" of these fibers is one of the characteristics that make them at least 100 times more potent than the commercial variety in causing mesothelioma, an inoperable and almost always fatal cancer of the membranes lining the chest and other body cavities.

Has anyone died or gotten sick from breathing asbestos released from construction activity in the El Dorado Hills area?

Health experts don't know. No one has studied it. The California Cancer Registry, which tracks cancer deaths, can't tell where or how a victim was exposed. Further, it typically takes 20 to 30 years from the time of initial exposure for mesothelioma to take hold. Victims who had moved away during that long latency would not be included in the county statistics.

Will the county-required asbestos dust controls adequately protect residents near construction sites?

No one has studied the question, according to Jack Momperler, an air pollution official who enforces the asbestos controls at work sites in Sacramento County. The primary control – watering the site – has proved effective in demolition of old buildings that contain asbestos fireproofing and insulation, he said. But, unlike the hollow chrysotile fibers in building materials, the amphibole asbestos does not absorb water – so spraying would be less effective, Momperler said.