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LOIS HENRY: New study doesn't hit the mark for air pollution deaths

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Don't be surprised if you see some coverage soon about a new study claiming that fine particulate matter (PM2.5) could be killing thousands of Californians every year.

The study will likely be touted as "confirmation" of previous work that first made PM2.5 a health scare in the early 1990s.

Don't be further surprised if this new study is then used by the California Air Resources Board (CARB) to gin up more regulations that will make it harder to drive a diesel truck or run most businesses in this state.

That's how it works: A study says we're all gonna die and CARB rides in to slay whatever dragon a handful of scientists claim to see.

Before you get all puffed up, I'm not some kind of air pollution advocate.

Our approach to cleaning the air must be reasonable, however. And that's where I say we've gone off the rails, chasing ever smaller returns at an ever greater cost.

I think a close examination of the science bears me out.

Right now, we're in a period when the public can read and comment on the new study. But that rarely happens.

Yet it's a crucial moment. It's when scientists claim there is an identifiable link between air pollution and premature deaths. That link is called the hazard ratio.

The hazard ratio is then used to come up with an actual number of human beings who -- supposedly -- will be felled by too many whiffs of PM2.5. The costs of those deaths are then weighed against regulatory costs. That ratio then justifies the rules.

For example, in 2006, CARB said diesel PM2.5 and ozone from ports and goods movement caused 2,400 premature deaths a year (see box for more info on death estimates) at a cost of \$19 billion. They proposed a host of rules -- at an annual cost of between \$200 million and \$300 million -- to cut emissions. So, for every \$1 invested toward reducing pollution, there would be \$3 to \$8 in benefits from avoided health costs, mostly from premature deaths, CARB said.

This new California-specific study, by Michael Jerrett, C. Arden Pope and a group of other like-minded air pollution scientists, pegs the hazard ratio for all causes of premature deaths at 1.08.

Which means that exposure to PM2.5 (at concentrations of 10 micrograms per cubic meter) elevates our risk of dying prematurely by 8 percent -- maybe.

The authors called that significant, and it could be. But, oh those devilish details, how they can change the balance.

Jerrett and Pope looked at PM2.5 and premature deaths under eight other models, each of which came back with zero effect of premature death.

Only one model showed any effect worth noting. It was a model no one had used before called "conurbation" in which California was carved into five big pieces.

Jerrett told me he had to create these conurbations to make up for the fact that death rates overall are far lower in urban areas like Los Angeles than in rural areas like Kern County.

OK, so they have one model out of nine that shows any kind of effect.

A deeper look, however, shows the range of uncertainty for even that model hits the zero mark. As in, PM2.5 isn't putting anyone six feet under before their time.

Another weakness: they used data from 1982 to 2000. Our air quality has improved vastly since the 1980s, or even the 1990s.

Two other recent California studies (Zeger, 2008 and Lipsett, 2011) both using more up-to-date data from 2000-2005 show no effect of premature death from PM2.5.

I say the Jerrett's and Pope's conclusion of a "significant" effect is a pretty big reach, especially considering how costly CARB regulations can be -- expensive filtration devices and requirements that operators phase out entire engine models by buying whole new fleets, etc.

Since this conurbation model is so new (Jerrett didn't even list it in his methodology outline when he got funding for the study from CARB) and the effect seems so slight, I wondered if the authors would recommend further study before CARB uses the study to craft new policies.

Nope.

His model is "state of the art" and represents the "best estimates available" of premature deaths from PM2.5 exposure, Jerrett said.

Pope was more circumspect saying public policy is a judgement call and his work is just focused on the science.

Yeah, but science is the foundation for regulations. Well, some science anyway.

CARB has routinely ignored other studies that show no effect of premature death from PM2.5. Now they've put out numbers that suggest the new rules will lead to 291 fewer deaths a year?

I don't see it.

Opinions expressed in this column are those of Lois Henry, not The Bakersfield Californian. Her column appears Wednesdays and Sundays. Comment at <http://www.bakersfield.com>, call her at (661) 395-7373 or e-mail lhenry@bakersfield.com

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