EXPERTS IDENTIFY ‘BLACK CARBON’ CUTS AS A SHORT-TERM FIX

By Lauren Morello

Cutting soot emissions is an important short-term fix for global warming, according to experts who testified in the House Oversight and Government Reform Committee yesterday.

Also known as "black carbon," soot is the second-leading source of U.S. emissions causing global warming, trailing only carbon dioxide. Like CO2, the tiny, dark particles of soot absorb sunlight, trapping heat in the atmosphere.

But there is one very important difference between soot and carbon dioxide. While CO2 lingers in the atmosphere for 30 to 43 years, soot lasts for just one to four weeks.

That means reducing black carbon emissions could have an immediate environmental effect, said Mark Jacobson, director of the Atmosphere and Energy Program at Stanford University.

"Control of soot emissions, particularly from fossil-fuel sources, is very likely to be the fastest method of slowing global warming" in the short term, he said.

Major cuts in soot emissions could slow the effects of climate change for a decade or two, buying policymakers more time to address CO2 emissions, he and other witnesses said.

In the Arctic -- an area warming twice as quickly as the global average -- cutting black carbon "is the most effective way we know to retard Arctic warming," said Charles Zender, an atmospheric physicist at the University of California-Irvine.

Soot particles carried to the Arctic from Africa, Asia and Europe land on snow and ice, making them less reflective and warmer. This hastens surface melting. Reducing the amount of soot that reaches the Arctic would help preserve rapidly disappearing ice, Zender said.

Satellite images released last month by NASA and the European Space Agency show Arctic sea ice dipped last month to its lowest level since satellite observations began in 1979, and about 40 percent below the average over the last 21 years. As it now stands, the melting ice is outpacing scientists' best predictions, he said, estimating that the Arctic's summer sea ice could disappear in 20 years.

Cuts in black carbon emissions would also bring large and immediate public health benefits, said Joel Schwartz, a professor of environmental epidemiology at Harvard University.

"Breathing particles shortens people's life expectancy," he said. "This has been seen in multiple studies."
But witnesses also cautioned that reducing black carbon alone is not enough to solve the global warming problem.

It "is not an alternative to CO2 reduction," said V. Ramanathan, a climatologist at the Scripps Institution of Oceanography. "It is at best a short-term measure to buy a decade or two to implement CO2 reduction."

Lawmakers' reaction

The approach seemed to find favor with committee leaders.

"You make a compelling case that we need to look at controlling black carbon as part of the solution" to global warming, Oversight Chairman Henry Waxman (D-Calif.) told witnesses at the hearing's end.

For his part, ranking member Tom Davis (R-Va.) seized on the idea of black carbon cuts as "an overlooked, cost-effective solution" to climate change.

The lawmakers peppered witnesses with questions about which soot sources to target and which technologies to use to control emissions.

In the long run, the best solution for reducing CO2 and black carbon emissions in the United States and industrialized countries is switching to vehicles powered by electric or hybrid engines or hydrogen fuel cells, Jacobson said.

But in the short term, he and others recommended retrofitting older diesel engines with particle traps could yield major benefits at a cost of a few thousand dollars per vehicle.

Current EPA regulations require particle traps for new vehicles. But since diesel engines can last for 30 years, the number of older engines still operating without the traps is a concern, witnesses said.

"That's where the opportunity is," Schwartz said. "Retrofit kits can be put in vehicles tomorrow. Hydrogen fuel cell-powered or electric garbage trucks aren't going to be here tomorrow."

The traps are not without drawbacks. Adding a trap to a diesel engine reduces its mileage by 3 to 8 percent, increasing its CO2 output.

Significant cuts in black carbon emissions are also possible in China, India and other developing nations, witnesses said.

Providing people who burn wood to cook food and heat their homes with different energy sources is one of the cheapest opportunities to cut black carbon, said Tami Bond, a professor of civil and environmental engineering at the University of Illinois at Urbana-Champaign.

Solutions could include distributing solar-powered cookers or providing people with access to natural gas to power their stoves.

While the United States has run into resistance from China, India and other developing nations on efforts to cut greenhouse gases, witnesses said they believed cutting black carbon could be a significantly easier sell.

"The conundrum with CO2 control is everyone gets the benefit, even if you're the only country who cuts," said Schwartz. "But with soot, there are local benefits, health benefits."