

CLEAN AIR: THE EFFECTS OF U.S. POWER PLANT CARBON STANDARDS ON HUMAN HEALTH

A little more than a year ago, the World Health Organization (WHO) reported that in 2012 around 7 million people died — accounting for one in eight of total global deaths — as a result of exposure to air pollution. These estimate more than doubled the previous ones, and confirmed that **air pollution** is now the world's largest single environmental health risk. The WHO concluded that reducing air pollution globally could save millions of lives.



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But, what policy changes would be most effective at saving lives? The answer comes from a new study published in the journal *Nature Climate Change* (May 4, 2015.)

The study, (US power plant carbon standards and clean air and health co-benefits), was based on data from the Census Bureau as well as detailed maps of the more than 2,400 fossil-fuel-fired power plants operating across the U.S. It outlines how changes in carbon dioxide emissions could lead to considerable health benefits for the U.S population.

According to the WHO, the diseases caused by air pollution include ischemic heart disease (40%), stroke (40%), chronic obstructive pulmonary disease (11%), lung cancer (6%), and acute lower respiratory infections in children (3%).

For the new study, the researchers analyzed three possible policy options for **power plant carbon standards**. The policy option leading to the biggest health benefits was the one that included changes proposed by the U.S. Environmental Protection Agency (EPA) on June 2, 2014, in the Clean Power Plan. Modeling analysis indicated that this option could prevent an expected 3,500 premature deaths in the U.S. every year, and avert more than a thousand heart attacks and hospitalizations annually from air pollution-related illness. Thus, according to the study, the formula presented in the draft Clean Power Plan is on the right track to provide large health benefits, and these health benefits depend entirely on critical policy choices that will be made by the EPA in the final Clean Power Plan expected in July. The Plan is the nation's first attempt to establish standards for carbon dioxide emissions from power plants.

It is also viewed as an important signal of U.S. leadership in the run-up to international climate negotiations in Paris in December.

Jonathan Buonocore, one of the researchers involved in the study, said in a press release: “If EPA sets strong carbon standards, we can expect large public health benefits from cleaner air almost immediately after the standards are implemented.”

Power plants are the nation’s largest source of carbon dioxide emissions that contribute to climate change. However, they release not only carbon dioxide, but also other pollutants such as sulfur dioxide, nitrogen oxides and particulate matter — precursors to smog and soot that harm human health. The study considered the added health benefits, or co-benefits, of carbon standards from reductions in the emissions of these other air pollutants.



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Charles Driscoll, lead author of the study, said in the press release: “The bottom line is, the more the standards promote cleaner fuels and energy efficiency, the greater the added health benefits.

We found that the greatest clean air and health benefits occur when stringent targets for carbon dioxide emissions are combined with compliance measures that promote demand-side energy efficiency and cleaner energy sources across the power sector.” He added: “The immediate and widespread local health benefits of cleaner air from policies to address greenhouse gas emissions can provide a strong motivation for U.S. and global action on climate change.”

According to the EPA, “The **Clean Power Plan** will maintain an affordable, reliable energy system, while cutting pollution and protecting our health and environment now and for future generations. States, cities and businesses are already taking action. The Clean Power Plan puts states in the driver’s seat to a cleaner, more efficient power fleet of the future by giving them the flexibility to choose how to meet their goals. The proposal is flexible — reflecting the different needs of different states.”

Sabrina Tavernise and Coral Davenport wrote in the New York Times that if enacted as devised, the rules could eventually close hundreds of coal plants and freeze construction of new coal plants for the foreseeable future, while encouraging the construction of new electricity generation from natural gas, wind, solar and other low-carbon energy sources.

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