Frequent Questions about the Health Effects of Diesel Exhaust

Why is diesel exhaust important?

As the gateway to Asia, the West Coast contains a dramatic concentration of diesel sources from every sector – from diesel trucks traveling along the I-5 and I-99 corridors, to diesel marine vessels and trains along the Pacific coast, to diesel agriculture equipment in the largest agriculture producing region in the U.S. (San Joaquin Valley), to diesel construction equipment operating in some of the fastest growing cities in the country. In addition, California has some of the worst air quality in the country. Diesel emission reduction projects represent an important, cost-effective way to gain air quality improvements.

What are the health effects from diesel exhaust?

Diesel exhaust contains tiny particles knows as "fine particulate matter." These tiny or "fine" particles are so small that several thousand of them could fit in the period at the end of this sentence. Diesel exhaust also contains ozone-forming nitrogen oxides and toxic air pollutants. Fine particles and ozone pose serious public health problems. Exposure to these pollutants can cause lung damage and aggravate existing respiratory diseases, such as asthma.

Particulate matter – especially the fine particles such as those in diesel exhaust – cause over 15,000 premature deaths every year. In addition to its contribution to ambient particulate matter, diesel exhaust is of specific concern because it has been judged to pose a lung cancer hazard for humans as well as a hazard from noncancer respiratory effects. In 2001, EPA determined that diesel particulate matter and diesel exhaust organic gases should be identified as a Mobile Source Air Toxic. EPA has designated diesel exhaust as a likely human carcinogen due to inhalation.

Who is most at risk?

People with existing heart or lung disease, asthma, or other respiratory problems are most sensitive to the adverse health effects of fine particles and ozone. Children and the elderly are also sensitive. Children are especially at risk from air pollution in general because they breathe 50 percent more air per pound of body weight than adults.

Reducing diesel exposures IS associated with reductions in the incidence and severity of asthma attacks and chronic bronchitis. It will decrease the number of lost school days for children and work days for parents and adult asthmatics.

What are the environmental concerns with diesel exhaust?

Fine particles in diesel exhaust contribute to haze, which restricts visibility. Diesel exhaust also contributes to ozone formation (ozone is a component of smog), acid rain. Moreover, unnecessary

idling of diesel engines wastes fuel and contributes to global climate change.

What is being done to reduce diesel exposures?

Diesel emissions are regulated by state, federal and local governments. At the federal level, in 2004 EPA finalized new non-road diesel rules. Additional diesel standards and test procedures will take effect in 2007. By 2030, when the federal rules are fully implemented, diesel trucks will be more than 40 percent cleaner than today's models. Although government regulations to be phased in over time will create new requirements to reduce diesel emissions from new engines, the Collaborative is working to bring about these air quality benefits sooner.

What is the Collaborative and what is it doing?

The Collaborative includes federal government agencies from the U.S., Canada and Mexico, as well as state and local governments and non-profit and private sector partners from California, Oregon, Washington, Alaska and British Columbia.

Building on the aggressive diesel emission reduction targets in EPA's on-road and non-road rules, and the success of EPA's Clean School Bus USA Initiative, California's Carl Moyer Clean Engine Incentive Program, Washington's Diesel Solutions Program, Oregon's Business Energy Tax Credit Program, and other federal and state voluntary emissions reductions programs, the Collaborative will identify and support voluntary and incentive-based diesel mitigation projects – projects that go beyond current state and federal standards.

The goal of the Collaborative is to leverage over $100 million in new funds for diesel emission reduction projects per year for at least 5 years to reduce emissions from the most polluting diesel sources in the most impacted communities and significantly improve air quality and public health. By targeting the higher polluting engines with the most cost effective strategies, we estimate that the benefits of this investment will significantly outweigh the costs.

How can I get more information?

For more information about the West Coast Diesel Emissions Reductions Collaborative, please contact Peter Murchie, murchie.peter@epa.gov or Michelle Roos, roos.michelle@epa.gov.

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