

Oral Testimony before the Clean Air Subcommittee
of the Environment and Public Works Committee of the US Senate
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**The Case is Strong, the Technology is Available, and Economic Benefits
are Excellent for DERA Funding of Diesel Particulate Filters for Retrofits**

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Good morning Mr. Chairman, ranking member Mr. Sessions, and members of the Clean Air Subcommittee of the Senate Environment and Public Works Committee. My name is Timothy V. Johnson, Director of Emerging Regulations and Technology for Corning Environmental Technologies, with Corning Incorporated in Corning, NY. It is an honor and a pleasure to help you understand the issues around diesel emissions and how remediation is a winning proposition for all stakeholders.

Corning Incorporated is one of the oldest companies in the world, dating to the 1850's. We invest heavily in R&D, and design and manufacture cutting-edge glass and ceramics materials that are central to solving problems and advancing a wide range of major products. In this regard, Corning is the recipient of four National Medal of Technology Awards, the Malcom Baldrige National Quality Award, and numerous other awards honoring our inventors and our relationships with the community and employees. I am a recognized expert in the field of vehicle emissions, keep a keen eye on future developments, and openly share my knowledge with the industry and government, so we can work together to reduce the harmful environmental impact of vehicles.

My colleague, Mr. Conrad Schneider, provided you a thorough, fact-based assessment of the health, climate, and societal benefits of diesel emissions. I will touch more on the technology and economic impacts.

Diesel exhaust is all around us, and quite toxic. Untreated diesel engines will emit about 10 to 100 million invisible (to the naked eye) carbon particles per milliliter (the volume of the rounded end of your little finger), and each one carries poly-aromatic hydrocarbons and other toxic agents deep into your lungs. It's no wonder the World Health Organization's (WHO) recently classified diesel engine exhaust as "carcinogenic to humans". This is their most significant toxicity designation, and demands action. Others, like the National Toxicology Program (NTP), US Environmental Protection Agency (EPA), and National Institute for Occupational Safety and Health (NIOSH), also have significant alerts on the toxicity of diesel exhaust. This is quite urgent, because we all are exposed. When you drive on the freeway, the air entering your car cabin contains upwards

of five times the background levels of toxic particulate matter, most of which comes from diesel engines (Health Effects Institute Traffic Review, 2010).

Effective and inexpensive technology is available to clean this up. In 2007, the US EPA set limits on diesel pollution from new truck engines that resulted in the use of Diesel Particulate Filters (DPFs) on all such engines. These amazing devices remove more than 99% of the fine particles. In fact, they are so effective that they act like huge vacuum cleaners, wherein the concentration of fine particles is higher in the air than in the exhaust, even in pristine Corning, NY. The use of filters is not limited to new engines. The same technology can cost-effectively retrofit on legacy engines.

The technology is a major cornerstone of the emissions control industry and generates high-quality jobs. According to the Manufacturers of Emissions Controls Association (MECA), in 2010 \$12 billion of economic activity and 65,000 high-paying US jobs were generated in vehicular emissions controls industry, and more than \$2B of this was from diesel truck controls (MECA press release, March 2011). Much more activity and jobs come from the truck companies and their engineers. Corning developed these filters back in the 1980's. We have just announced a new \$245 million plant investment to make heavy-duty diesel emissions control components in Corning, NY. The plant will directly employ about 250 people at the factory and warehouse. The plant adds to our US capacity for these products, but much of the product from this new plant will be exported to China and other developing markets.

DERA (Diesel Emissions Reductions Act) is an effective public vehicle for moving forward. Approximately 11 million older diesel engines remain in use today and predate EPA's newest emissions standards. Since 2008, EPA has awarded more than \$500 million to over 500 DERA grants across the country. About 60,000 engines have been fit with filters using government funding. Each government dollar spent on this retrofit technology returns at least \$13 to society, according to EPA analyses. These projects have created up to \$8.2 billion in health benefits, so funding demands for projects remain high even as funding availability levels decrease. Funding requests exceed availability. Six project applications remain unfunded for every one that gets money.

And, "one last thing", as Steven Jobs would say so-effectively when finally disclosing the coolest part of a new Apple product, the filters take out >90% of black carbon. This is a proven global warming agent, thousands of times more potent pound-for-pound than CO₂. In fact, the black carbon emissions from a legacy diesel engine without filters is upwards of 30% of the carbon footprint of medium- and heavy-duty trucks. Reducing these black carbon emissions results in immediate, positive climate impacts.