

Federal Efforts to Protect Public Health by Reducing Diesel Emissions

Statement of the
Diesel Technology Forum
Allen Schaeffer, Executive Director



Before the

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Subcommittee on Clean Air and Nuclear Safety
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INTRODUCTION

Good Afternoon. My name is Allen Schaeffer and I serve as Executive Director of the Diesel Technology Forum, a not for profit educational group representing the nation's leading diesel engine, vehicle and equipment manufacturers, fuel refiners and suppliers, and those that manufacture emissions control technology, and allied organizations. We appreciate the opportunity to appear today before the Subcommittee on the issue of Federal Efforts to Improve Public Health by Reducing Diesel Emissions.

Because of its unmatched combination of power, performance and energy efficiency, diesel technology is the workhorse of the US and global economy, powering over 90 percent of commercial trucks, more than three-fourths of all transit buses, 100 percent of freight locomotives and marine work boats and two-thirds of all farm and construction equipment. Diesel engines are also found in back up emergency electrical generators, stationary pumps and other industrial equipment. Diesel powered cars and SUVs also make up a growing percentage of new passenger vehicles sold nationwide in all 50 states. In fact, economical clean diesel is making a bigger contribution toward reducing oil consumption and greenhouse gases more than any other affordable drive technology today.

Our testimony will focus on two areas; traditional regulatory approaches for new engines, fuels and vehicles; and those approaches that have involved non-traditional voluntary incentive based approaches. The main focus of my remarks here today will be on the efforts to reduce emissions from the existing fleet of diesel engines and equipment.

II. NEW CLEAN DIESEL ENGINE TECHNOLOGY IS NEAR ZERO EMISSIONS

In 2000, EPA established a regulatory pathway for highway diesel engines to reach near zero emissions in a ten year period. In 2004, regulations were also established for the many categories of off-road diesel engines and equipment setting forward a similar set of emissions

goals. A graphical depiction of the changes in emissions levels for both highway vehicles and one category of off-road engines are found in the Appendix to this testimony. These last 10 years have been called the decade of clean diesel: a system of cleaner engines, low-sulfur fuels, and advanced emissions control technologies ultimately deployed for all ranges and types of diesel powered vehicles, equipment and machines.

The results are clear. New highway diesel truck engines have near zero emissions of particulate matter and oxides of nitrogen (NOx) -- 98 percent less than 1988 models. It is noteworthy that truck and engine manufacturers are not only producing near-zero level emissions vehicles, but these vehicles are consuming on average of 5 percent less fuel. Thanks to these advancements, in some US cities, the air coming out of a class 8 heavy-duty clean diesel truck is cleaner than the air going into it.

Similar reductions in emissions of particulates and oxides of nitrogen are now beginning to fall in place over the next 3 years (2011-2014) for the wide range of off-road engines found in everything from small construction equipment and farm machinery to freight locomotives, marine vessels, work boats and very large off-road machines and mining equipment. In fact, this year 2011 marks the debut of a number of the “fourth generation” or Tier 4 emissions level machines in off-road applications.

The new generation of clean diesel technology is not only meeting its emissions reduction targets but is also exceeding them. A jointly funded government and industry research efforts known as the Advanced Combustion Emissions Study (ACES) carried out through the Health Effects Institute and Coordinating Research Council are evaluating performance of the 2007 generation clean diesel heavy-duty engines. Phase I results released in 2009 showed emissions levels to be as much as 90 percent lower than 2004 generation technology.

Finally in the category of reducing diesel emissions from new technology, truck and engine makers are working with EPA and NHTSA on the first-ever regulation of greenhouse gas and fuel consumption standards for medium- and heavy-duty commercial vehicles, expected to be finalized this July. This final rule will establish standards for these classes of vehicles over the next decade that will lead to further improvements in diesel engine efficiency as well as vehicle attributes such as aerodynamics and tires. An overall reduction in fuel consumption typically translates into lower overall vehicle emissions.

Today, new diesel buses, trucks and other engines are more than 90 percent cleaner. These new diesel engines operate smoke-free, have created thousands of new jobs in the hard-hit engine manufacturing sector and elsewhere, and are helping to save escalating fuel costs by operating more efficiently. This national clean diesel effort has historically enjoyed broad, bipartisan support. How broad and bi-partisan? President William J. Clinton signed the first regulation to clean up diesel trucks and buses in 2001, and President George W. Bush signed the next regulation to clean up diesel construction and farm equipment in 2004, and President Barack Obama initiated the rule for reducing GHG emissions from medium and heavy duty trucks.

III. MODERNIZING AND UPGRADING EXISTING ENGINES AND EQUIPMENT: CLEAN DIESEL RETROFIT AND THE IMPORTANCE OF RETAINING THE DIESEL EMISSIONS REDUCTION ACT (DERA).

Diesel engines are known for their durability and reliability. Customers who purchase these technologies value these traits and it is not unusual to see 10 or 15 year old construction machines, agricultural equipment or commercial trucks. In the course of developing cleaner diesel engines and fuels it became clear that some technologies could be deployed on existing vehicles and equipment which would enable current truck, bus or machine owners to improve the environmental footprint of their equipment while enhancing its overall value.

“Diesel retrofit” has become a term of art reflecting a number of strategies and choices for modernizing and upgrading existing diesel engines. These primarily include retrofitting with an emissions control device; repowering, or replacing, an older engine with a new one; rebuilding an older engine to a higher emissions tier level; refueling with cleaner fuels; or replacing an entire vehicle or machine with a newer one.

Senator Carper, you and other Congressional leaders recognized as early as April 2004 the value and potential of clean diesel technology and the opportunity for upgrading existing engines. You brought together an unusual array of 32 groups to provide input on what was to become the Diesel Emissions Reduction Act (DERA) in 2005, not directing EPA toward a regulatory mandate—but instead a voluntary incentive based program authorizing up to \$200 million annually. Over 600 groups and organizations have signed on in support of this program.

DERA has improved America’s air quality by modernizing older diesel engines and equipment through engine replacements and retrofits. DERA addresses all of the “big E’s – environment, energy and economy. In its first year alone DERA resulted in 46,000 less tons of NOx; 464,000 less tons of CO₂ as well as saving 3.2 Million gallons of diesel fuel, resulting in an economic gain of \$8 million to the economy.

Every dollar invested in diesel retrofits and replacements yields at least \$13 in environmental and public health benefits. Plus, DERA has provided federal funds in a competitive process that encourages state, local, or private funding matches. By doing so, DERA has been able to leverage roughly three dollars in state, local, or private funding for every federal dollar. It’s hard to find a better investment in public health.

The DERA Program has benefitted every state including those represented by the 11 members of this Subcommittee. For example, in **Delaware**, DERA funds have gone to upgrading equipment at the Port of Wilmington, local school bus fleets and municipal vehicles as well as off road and construction equipment.

In Sublette County **Wyoming**, the WY DEQ used a combination of funds including a \$1.1M EPA grant as part of a \$2.3M project that involved 11 non-road construction companies and 34 pieces of equipment. The project involved machine repowers and engine upgrades in construction equipment in the infrastructure serving the Pinedale natural gas fields.

Despite DERA’s reauthorization for an additional 5 years in the 111th Congress, this highly successful voluntary incentive based program was proposed for termination in the Administration’s FY2012 budget proposal. This came as a shock to the legions of industry, environmental, health, labor and governmental organizations that continue to support it. There is strong support in House evidenced by the fact that they voted 372 to 52 in Dec. 2010 not to reallocate DERA money to other EPA programs.

This proposed termination report from OMB is in our view based on inaccurate information and misinterpretation of the program. For example, with regards to continued need, by the end of 2011, it is estimated that roughly only 50,000 diesel engines out of the 11 million that exist will have been replaced or retrofitted with DERA funds (*note this does not include FY09/FY10 funds*). For the reasons stated previously, the recession has substantially impacted the acquisition of new lower emitting technology into the marketplace, and will substantially delay the benefits of using the new technology.

This proposed termination language in the OMB Budget document is inconsistent with the public statements by the Administration. In March 2nd testimony before the full Senate Environment and Public Works Committee, EPA Administration Jackson acknowledged continued need for the DERA program.

DERA's continuation is important because it provides the seed funding for thousands of fleet owners, farmers, and other diesel users to buy the new engines, retrofits, and technologies. In turn, this is unlocking the potential of America's engine makers and equipment innovators. U.S. engine companies are producing the most durable, efficient, and cleanest diesel engines in the world and other clean diesel manufacturers are making the catalysts and filters that can make older diesel engines much, much cleaner during the years of service that they have left.

DERA IS A PROGRAM THAT WORKS. It works because it:

- enjoys bipartisan support in Congress and a uniquely broad-based coalition of followers and supporters numbering over 500 organizations;
- Is voluntary and incentive based, offering carrots --- instead of sticks --- to interested parties to participate.
- Allows owners to choose verified technology that works best for their circumstances; not all technologies work on all equipment;
- gives states the flexibility to apply DERA funding based on local emissions inventories to improve air quality;
- provides for a results oriented, competitive process to ensure the greatest level of success;
- Greater understanding of the practical issues at the intersection of environmental goals and real-world business decisions; making distinctions between what is technologically possible and economically practicable.
- Encourages private and local investment through the provision of matching funds to leverage the federal incentive dollars by as much as 3 to 1.
- Rewards the American public with a substantial return on its investment - as much as \$13 dollars in benefits for every dollar invested, and as the National Academies of Science have said is among the most cost-effective air quality projects.

There is a well-established and Continuing Need for DERA

The recent recession has substantially altered the economic landscape of many large and small businesses in industries that are highly dependent on diesel technology as the tools of their trade. In addition to the thousands of construction and trucking companies that simply went out of business, those that survived delayed their normal cycle for capital investments. New truck sales declined dramatically, construction machine sales fell to their lowest levels in years and the age of the existing fleet grew. According to 2010 data from R.L.Polk, over the last 5 years the average age of a class 8 tractor trailer has increased by 1.7 years. As a result, the need for upgrading existing diesel engines and equipment is more important today than five years ago.

Voluntary Incentive-based programs are especially important policy tools for the future.

While signs of an economic recovery are more apparent today, many owners and operators of diesel equipment in the construction, agriculture and transportation industries are still not benefitting from these small gains, thus their new equipment acquisition and retention cycles may be extended for the foreseeable future. A continuing commitment to the voluntary, incentive-based DERA program would promote the realization of continued progress and shared investment towards clean air goals across all sectors of our economy.

Manufacturers of diesel engines and equipment recognize and respect the significant value that contractors, truckers and other diesel equipment owners place in their equipment, and the factors influencing their fleet management decisions. Equipment managers want the ability to manage their business in a way which enables them to be good employers, efficient producers and good stewards of the environment, and a voluntary incentive-based program has proven to be the best way to achieve those mutual goals.

CONCLUSIONS

Diesel engines are the workhorse of our economy for today, tomorrow and the foreseeable future. The new generation of clean diesel technology – cleaner fuel, advanced engines and emissions control systems – is now near zero levels of emissions. End users that have acquired the new technology are finding it to meet or exceed their expectations with performance, fuel economy and low emissions. Every category of stationary and mobile diesel engines – with the exception of ocean going container vessels – is now on a regulatory path to cleaner diesel fuel and low emissions diesel engine technology.

There are continued opportunities and clearly identified need for voluntary incentive based programs to modernize and upgrade existing engines and equipment. Economic conditions today that began over the last 3 years in the construction and trucking sector have had a substantial negative impact on the ability of many businesses to upgrade their existing fleet of technology, increasing the average age of fleet equipment, and increasing the prospect that older engines and equipment will be used for even longer than before.

Congress has played a visionary role in establishing and funding a voluntary-incentive based program – the Diesel Emissions Reduction Act (DERA) to encourage the modernizing and upgrading of existing engines and equipment.

Although DERA funds have leveraged other dollars in support of additional retrofits, there is no question that the number of engines retrofitted or replaced to date represents only the tip of the iceberg. Now, as the recession keeps diesel engines on the road and jobsite longer and longer, it's even more important to help fund programs to retrofit and clean up those older engines. If ever a program made sense and had the support of environmental, labor, public health and industry groups, this is the one.

Since 2005, DERA has been a smart budget choice and a successful program to clean up diesel school buses, trucks, construction equipment and farm engines across the nation. With 11 million older diesel engines still on our roads, construction sites, and farms, Congress needs to

continue funding DERA.

Thank you for the opportunity to appear today and I would be happy to answer any questions.

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Figure 1: Reductions of Nitrogen Oxides and Particulate Matter Emissions from heavy-duty diesel trucks.

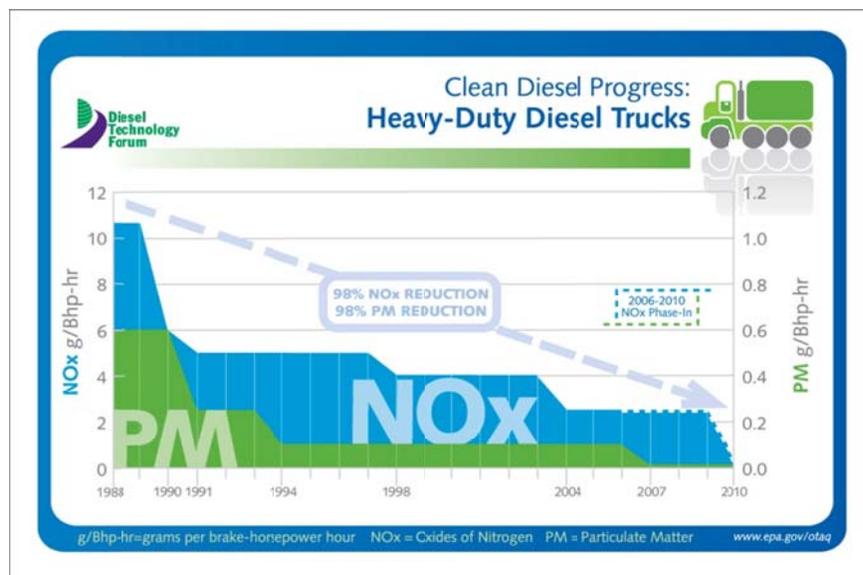


Figure 2: Reductions in emissions of nitrogen oxides and particulate matter in large off-road machines (bulldozers and mining trucks 300hp - 600hp)

