

DIESEL EMISSION FILTERS SAVE LIVES IN CALIFORNIA

More than 50,000 diesel retrofits have been installed in California during the past decade.



Emission control retrofit devices enable older engines to operate nearly as cleanly as new engines with the latest technology. This allows owners of older engines to keep them in use longer – while still protecting Californians from harmful diesel emissions.

Despite this success, many fleet operators want to be let out of requirements to either retrofit their old engines, or purchase new ones. They argue – falsely – that diesel retrofits are prone to failure. In truth, diesel emission control devices are reliable, safe, and highly cost-effective.

RETROFITS ARE RELIABLE AND SAFE

- **RELIABLE** – Filter-related problems are rare. Most often they are caused by poor engine maintenance, which causes excess soot in the engine exhaust to plug the filter.
- **TESTED AND PROVEN** -- New York City retrofitted half its bus fleet and left half unchanged to compare performance. After one year of normal operation, including proper maintenance, no statistical difference in downtime was found – so, the city retrofitted the rest of its fleet.
- **SAFE** – Despite more than 3 million trucks currently operating with exhaust filters, retrofit critics can point to only a couple of fires that have ever involved a filter. In each of those incidents, the suspected causes are a combination of poor engine maintenance and operators ignoring repeated warning alarms.

RETROFITS ARE HIGHLY EFFECTIVE

- **COST EFFECTIVE** – Diesel exhaust is classified as a carcinogen or likely carcinogen by most expert agencies. EPA estimates the health benefits of reducing PM in diesel exhaust can be as much as \$720,000 per ton.
- **REDUCING HEALTH RISKS** – Diesel particulate emissions from on-road trucks are one of the primary health-risks found in West Oakland and other commercial port communities.
- **SMALL DELAYS = LARGE HEALTH COSTS** – Delays and extensions to the requirements of the truck and bus rule could ultimately result in a health cost of up to \$1 billion borne by Californians.



REGULATORY CHANGES HAVE ECONOMIC AND ENVIRONMENTAL CONSEQUENCES

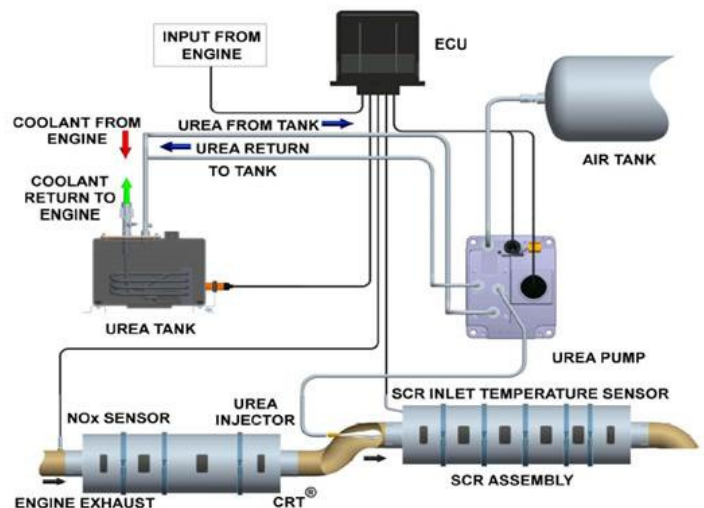
- **HIGHER COSTS FOR FEWER BENEFITS** –Economies of scale allow manufacturers to lower unit prices as sales increase. By ensuring that fewer retrofits will be installed, relaxed standards cause fixed overhead costs to be spread over a smaller number of units, increasing unit costs. Meanwhile, the overall emissions increase as total retrofit numbers are reduced.
- **REWARDING PROCRASTINATION** – Delay in the truck and bus rule is unfair to those truck owners that complied with the regulation. Proposed changes undermine future regulatory efforts by encouraging regulated parties to test ARB’s resolve to impose meaningful deadlines.
- **REDUCING JOBS, POSTPONING INVESTMENTS** – Fewer retrofits mean fewer California jobs needed to install and maintain retrofit equipment. Regulatory uncertainty discourages investment in innovative vehicle technologies needed to meet air quality and climate objectives.

RECOMMENDATION – PREVENT BACKSLIDING

- **INTRODUCE HEAVY DUTY INSPECTION AND MAINTENANCE (I&M)** – Because our current, highly-efficient emission controls continue to operate and eliminate emissions even for poorly-maintained engines – without an increase in visible exhaust – an I&M program is needed to ensure that vehicles are properly maintained and emission levels do not exceed standards. I&M could also identify engine malfunctions *before* any potential damage to emission control systems occurs.
- **ENSURE CONTINUED USE OF DIESEL FILTERS** – Rapid advances in engine combustion now allow more than 50% of off-road engines to meet Tier 4 standards without the use of a filter. Filters are a more durable strategy for controlling PM emissions from off-road engines that are often not well maintained.
- **ENSURE AFTERMARKET DEVICES MEET STANDARDS** – A number of aftermarket emission control devices sold in California fail to meet performance standards. ARB should act quickly to remove these devices from the market until they pass appropriate performance tests.

FUTURE CHALLENGES

- **INNOVATIVE NOx TECHNOLOGIES** – To meet both clean air and climate goals, California needs increasingly advanced vehicle technologies. Absent significant NOx reductions from vehicles, California will not be able to attain the current ozone NAAQs – and EPA may soon conclude that a stricter ozone NAAQs is necessary to protect human health. Also, because NOx emissions often increase as engines become more efficient, emission control technology innovations are needed simply to maintain the current level of emissions on these more efficient engines.
- **PARTICLE NUMBER (PN) STANDARD** – The warnings about harmful effects of ultra-fine particles (UFP) are growing louder from health scientists. ARB should explore the development of a PN standard in its regulatory structure for mobile sources. PN standards, currently in use across Europe are more protective of human health than particle mass standards.



AESI’s AND MECA’s MEMBERS LOOK FORWARD TO FURTHER COLLABORATION WITH THE AIR RESOURCES BOARD AS IT ADDRESSES THE CHALLENGES OF IMPROVING AIR QUALITY AND REDUCING GREENHOUSE GAS EMISSIONS.