

**STATEMENT OF THE
MANUFACTURERS OF EMISSION CONTROLS ASSOCIATION
ON THE AIR RESOURCES BOARD'S
PROPOSED AMENDMENTS TO THE TRUCK AND BUS REGULATION**

April 24, 2014

The Manufacturers of Emission Controls Association (MECA) is a non-profit association of the world's leading manufacturers of emission control technology for motor vehicles. Our members have over 40 years of experience and a proven track record in developing and manufacturing emission control technology for a wide variety of diesel and gasoline, on-road and off-road engines for both new and in-use vehicles and equipment. A number of our members have extensive experience in the development, manufacture, and application of PM and NOx control retrofit technologies. MECA members are responsible for many of the retrofit technologies presently included on ARB's list of verified technologies.

MECA members understand the strain of the economy on small businesses and ARB's need to balance the emission reduction goals of the State Implementation Plan and the health benefits of the Diesel Risk Reduction Plan with the combined economic impacts of regulations on the citizens of California. This is further complicated by the need to maintain a level playing field among truck owners that have already made significant investments to comply with ARB's in-use truck and bus regulations. We understand the hardships that the fleet regulations impose on the regulated community because MECA members too are subject to regulations that govern verification, warranty and in-use compliance of the devices that they manufacture. ARB staff was given a difficult task by the Board in October 2013 to achieve a balanced set of amendments given the demands of a diverse group of stakeholders. We feel that staff did an excellent job in addressing and balancing all of the issues they were tasked with by the Board. This proposal is the end product from a long list of compromises. We believe that some of the added flexibilities involve significant loopholes and opportunities for abuse. One flexibility extension in particular that deserves further consideration is the proposed compliance delay until 2018 as a result of a loan denial. We urge ARB to identify means to tighten up the qualification requirements to insure that abuse of the good faith efforts and other flexibilities is minimized. Furthermore we believe that additional enforcement resources should be dedicated to insure that a high compliance rate results in real emission reductions.

There are unintended consequences as a result of repeated changes to regulations that we would like to address in our comments in an effort to prevent further changes to this rule in the future. Changing regulations destabilize the marketplace and send the wrong message to stakeholders making it difficult for anyone involved to plan and operate their business. The most recent example of unintended consequences caused by making changes to this regulation is the good faith provisions that were available through the end of last year. The staff report cites 8,195 retrofit filter orders reported into the TRUCRS database. Our members have been informed by their distribution chain that as soon as more flexibility extensions were proposed by ARB, many of these orders were cancelled or postponed until after April 24th because future changes to the

rule are expected. We ask that ARB clarify that the 2014 compliance deadlines, to which the good faith extensions apply, have not changed and the proposal only addresses future deadlines.

In our comments we would like to highlight some of the unintended consequences of multiple amendments to the rule. We urge the Board to resist making further changes and preserve the remaining benefits of this regulation. Furthermore, we would like to address some of the general remarks that have been made throughout this regulatory process about the lack of performance, durability and safety of retrofit diesel particulate filters (DPFs) and diesel filter technology in general.

Economic Impacts of Regulatory Changes

Today's economic environment has put a significant strain on businesses of all sizes, including emission control manufacturers. Our members have invested and continue to invest significant resources in developing, verifying and supporting diesel retrofit technologies for the whole range of in-use diesel engines that have been regulated under the Diesel Risk Reduction Plan (DRRP) over the past 14 years. The fleet rules that make-up the DRRP have already touched many of the diesel engine sectors that make-up the mobile fleet in California. These include on-road trash trucks, public fleets, off-road, and stationary sources most of whom have already stepped-up and invested in doing their part to clean-up the air in California. Just as emission regulations drive investment in the development and commercialization of new technologies, regulatory changes resulting in market uncertainty, drive-up risk and disincentivize investment. This is true not just in the emission control industry but in any green technology industry that relies on regulations to exist. California depends on green technology companies to meet their future emission reduction and climate objectives and these companies rely on regulatory stability to plan their investments, hire workers and support their products. Regulatory changes in the middle of implementation destabilize the market, not only for the companies that have made business investments but also the end users that have invested in complying with the regulations and who must compete with their peers who are awarded flexibilities after the start of implementation. Hundreds of companies have invested and complied and are asking for a level playing field for doing the right thing.

The in-use fleet regulations that make up the DRRP have contributed to the growth of the North American diesel retrofit industry which represents approximately \$200 to \$300 million dollars in annual revenue. In the process of delivering technologies to support and justify clean air requirements, emission control device manufacturers contribute to growing California's green economy and green jobs sector. A survey conducted in late 2008 shows that MECA members directly contribute over 65,000 green jobs around the country including more than 1,000 jobs in California. These jobs include technical and service personnel responsible for selling, developing, and manufacturing diesel retrofits. They do not include independent small businesses in California that install and maintain retrofit devices. An independent economic analysis completed in early 2009 (available on MECA's diesel retrofit website, www.dieselfretrofit.org, under: Resources >> Other) translates investments in clean diesel vehicles and diesel retrofit technologies into jobs associated with manufacturing, sales, installation, and maintenance of advanced emission control technologies. Every one million

dollars spent on diesel retrofit technology creates or preserves about 21 jobs, and every one million dollars spent on replacing older vehicles and equipment with newer clean diesel vehicles creates or preserves about 15 jobs. One estimate suggests that a full-time job is created as a result of the installation of every 3-7 diesel retrofits. Another way to look at this is that the installation of 1000 retrofits creates 140 to 330 green jobs. As a result of repeated regulatory changes and the loss of potential retrofit opportunities, this industry has been severely impacted. According to the staff report, the currently proposed amendments alone are likely to result in a loss of 8,420 retrofit opportunities or \$160 million in revenue over the next three years. Using the above relationships, this could represent as many as 3,300 lost retrofit related jobs in California. This is in addition to the 2010 changes to the on and off-road in-use fleet rules that eliminated over 80,000 retrofit opportunities or a loss of \$1.5 billion in retrofit-related revenue and impacted an estimated 11,200 to 26,400 jobs. Many of these jobs were or could have been in California.

The staff report estimates that the total savings of implementing the proposed changes to the regulation is \$400 million. These savings to one set of stakeholders are balanced against costs to the environment, other industries, small service businesses and the health of Californian's and these costs are have not been quantified in a complete regulatory cost/benefit analysis. Although the effect of a single regulatory change in isolation may not be significant, the cumulative impact of repeated changes can add up, go unnoticed and potentially bankrupt businesses. Even though the mandatory retrofit requirements under the proposal have dropped significantly, we believe it is in the best interest of the economy and air quality for VDECS manufacturers to remain financially healthy so they can honor the warranties and service the nearly 50,000 retrofit DPFs in use around the state of California. We would like to partner with ARB to identify opportunities within the verification and in-use compliance regulation that may provide economic relief to our industry while insuring that devices continue to be available and deliver the needed emission reductions from the in-use diesel fleet.

Emissions Impact of Regulatory Changes

Identical to the economic impacts discussed above, the full impact of multiple regulatory changes on the health effects of lost PM reductions are not fully appreciated when considered in isolation. Furthermore, describing lost PM emission reductions in units such as tons per day or percent relative to a baseline often understates the impact that a light, fluffy, ultrafine particle such as diesel soot has on the general population that breathes it. The staff report correctly concludes that by 2020 the ton per day contribution of diesel PM_{2.5} emissions under the proposal will be at the same level as predicted by the current rule. It is also correct that the overall impact on PM reductions is approximately a loss of 7 percent of the reductions under the current regulation in the early years of implementation. Looking at it in terms of the total mass of PM emitted and then the volume of PM emitted as a result of all of the changes to this rule gives a different perspective. What sounds like a benign 7 percent loss of PM reductions equates to 1,350 tons of additional PM emissions over the first five years of the proposed regulation. Putting this in terms of a lost health benefit perspective, using U.S. EPA estimates of health costs avoided from reductions in directly emitted PM_{2.5} of \$320,000 to \$730,000 per ton (U.S. EPA Technical Support Document, *Estimating the Benefit per Ton of Reducing PM_{2.5} Precursors from*

17 Sectors, January 2013) offers a different perspective on the impact of the proposed changes. To a first approximation, the cost to health of the increased PM emissions more than offsets the \$400 million in compliance savings estimated by the proposal with a health cost to the state in the range of \$432 to \$986 million.

The above analysis looks at only the proposed changes in isolation, and gives no consideration to the changes that this regulation already underwent three years ago to provide economic relief to the same group of stakeholders. The impact of the 2010 amendments represents a loss of 3,496 tons of PM over the life of the regulation which similarly exchanges the estimated savings of the 2010 changes with healthcare and other costs to the state and other stakeholders. In essence the regulatory changes are being subsidized by the people whose health the rule is supposed to protect. To get a visual perspective on the amount of PM that will make its way into the air as a result of relaxing the requirements of this regulation, one needs to only consider the fluffy nature of soot to realize that the cumulative volume of PM emissions due to both the 2010 and proposed 2014 amendments is enough to fill over 201, fifty-three foot tractor trailers.

The lost PM emissions as a result of repeated flexibilities don't stop with the direct health effects. Black carbon emissions are a major component of diesel particulate matter from diesel engines. These lost PM reductions represent a significant climate change co-impact due to the large contribution that black carbon may have on short term global warming as viewed by many leading climate experts (including Dr. Mark Jacobson of Stanford University, Dr. V. Ramanathan of the Scripps Institute at the University of San Diego, and Dr. Charles Zender of the University of California - Irvine). With a 20 year Global Warming Potential of 2,200 tons of CO₂-equivalent, black carbon is second only to carbon dioxide in its climate impact. The staff report points out that on a 20-year time horizon, the impact of the proposed changes to the regulation is the equivalent to emitting 3 million tons of CO₂, which staff considers as insignificant and within the accuracy of the estimate. This is correct when taken in isolation; however, the cumulative impact of both the 2010 amendments and the 2014 proposed changes to the rule is equivalent to the warming potential of 10 million tons of CO₂ emitted. We believe there is a danger in losing the high level perspective when only considering the incremental impact of individual regulatory changes in the cost benefit analysis of a regulation. We encourage the Board to also review the cumulative impact of multiple changes when weighing the benefit of a regulation or the cost of any future amendments to the truck and bus regulation.

In addition to the warming impact of black carbon in the atmosphere, black carbon that settles on snow or ice can decrease the reflectivity of the frozen material (a property known as the "snow or ice albedo"), leading to a faster melting rate. This has a special relevance to California because of the state's reliance on Sierra Nevada snow pack to store water during the wet season and then release it slowly during the spring and summer. Thus, black carbon that settles on the Sierra snowpack can increase the melting rate, overload reservoirs and cause flooding (Barnett T.P., Adam, J. C., and Lettenmaier, D. P., "Potential Impacts of a Warming Climate on Water Availability in Snow-Dominated Regions,").

PM Emission Control Technology Experience and Durability

MECA has been engaged in the workshops and hearings held with respect to all the fleet rules that make up the DRRP. Over the years, general remarks have been made on the lack of performance of retrofit devices with no data or information to support their claims. We were encouraged by the Board's request, last October, for staff to study the real world experience with emission control technology, for both retrofit and OEM installations. We provide some comments regarding the technological effectiveness of particulate filter technology and retrofit experience with these devices over the past 20 years. MECA has provided stakeholders with documents on diesel retrofit technologies, such as "Retrofitting Emission Controls on Diesel-Powered Vehicles" and a variety of retrofit case study reports. These documents are available on MECA's diesel retrofit web site at: www.dieselretrofit.org.

MECA's annual sales survey of retrofit technologies sold by MECA members has shown that since 2001, approximately 50,000 Level 3 DPFs have been deployed in California and nearly 126,000 have been installed across the U.S. on both on-road and off-road vehicles and equipment (MECA estimates that total worldwide retrofit DPF installations exceed over 300,000 filters). For over 30 years, off-road diesel engines in the mining, construction and materials handling industries have been equipped with exhaust emission control technology – initially with diesel oxidation catalysts (DOCs) and followed later by diesel particulate filters (DPFs). Since 2007 every new diesel vehicle sold in the U.S. or Canada has been equipped with a high efficiency diesel particulate filter to comply with U.S. EPA's 2007/2010 heavy-duty highway engine emission regulation. This represents over 3 million new trucks operating on DPFs mostly in the U.S. In 2010, new highway trucks were required to reduce NOx emissions by 90 percent relative to pre-2007 levels and have been equipped with NOx control technologies such as urea-SCR catalysts and high flow EGR systems in addition to DPFs. European regulators addressed NOx emissions first on heavy-duty trucks and SCR systems were equipped on new trucks to comply with the 2005 heavy-duty Euro IV emission regulations. DPFs became standard equipment on new European heavy-duty trucks starting in 2013 to comply with Euro VI heavy-duty highway emission standards. Light-duty diesels make up about 50 percent of new European passenger car sales in Europe and DPFs were first offered on diesel passenger cars in 2000 and are now standard equipment on all new European diesel light-duty vehicles. The fact is, diesel particulate filters are utilized by tens of millions of vehicles and universally recognized as a reliable, effective and best available vehicle particulate control technology by industry and regulators around the world.

The Advanced Collaborative Emission Study (ACES) demonstrated the effectiveness of DPF technology on 2007 commercial heavy-duty diesel engines from four of the major manufacturers, all equipped with DPFs. The 2007 OEM-equipped DPF technology reduced PM emissions by over 99 percent (90 percent below the standard). When these filters are catalyzed, they reduce HC emissions, polycyclic-aromatic hydrocarbons (PAHs), dioxins and other toxics by 80 percent or more from their engine-out levels. The second phase of the ACES study evaluated three commercial 2010 technology heavy-duty diesel engines with both DPF and SCR technology and showed a further performance improvement above and beyond the 2007-compliant engines of an additional 70 percent lower PM emissions, including a further 70

percent reduction in ultrafine particles as represented by particle number emissions. This result was supported by a separate European study that demonstrated that these advanced wall-flow DPFs not only capture over 99 percent of the soot particles in the PM_{2.5} range, they are even more efficient at capturing over 99.8 percent of ultrafine particles. Ultrafine particles in the less than 100 nanometer size range contribute almost nothing to the overall mass of PM in the exhaust however; they may represent a huge number of particles with an extremely high surface area. Ultrafine particle toxicity has been the focus of numerous health studies that have shown that these ultrafine particles may pose the greatest adverse health effects due to their high surface area that can attract volatile toxic compounds and their ability to penetrate deep into the lungs. Although ultrafine particles are not currently regulated they are the topic of extensive research and discussion among the health community. A co-benefit of Level 3 DPF filters is that they capture or oxidize the majority of ash, carbonaceous or volatile ultrafine particles present in the exhaust.

Light-duty gasoline engines, used in passenger cars, are transitioning to using gasoline direct injection (GDI) technology to gain fuel economy benefits and meet tighter CO₂ standards. It is well known that this new fuel injection technology leads to much higher PM emissions than traditional port fuel injected gasoline engines and can reach the PM emission levels of an unfiltered diesel engine. Based on the excellent experience with filters on diesel engines, automobile manufacturers are considering the use of high efficiency, wall-flow particle filters on gasoline vehicles to meet future PM standards required by ARB's LEV III in 2025 and European particle number standards, for gasoline GDI engines, starting in 2017.

The wide spread acceptance of wall-flow particulate filter technology and numerous published test results speak to the performance and effectiveness of this technology in both diesel and gasoline direct injected engine applications. During the December 2013 ARB truck and bus workshops a number of stakeholders addressed the reliability and safety of retrofit DPF devices. We would like to provide a summary of peer reviewed data and information about these devices that is available in the open literature.

MECA has aggregated warranty claim information provided by our members and we summarized their real-world experience with warranty claims. The warranty information represents passive Level 3 VDECS warranty claim information from several MECA manufacturers as a percentage of sales for the past three years (2010-2012). This is not as complete a picture as that compiled by ARB staff for the December 2013 workshops since they have access to warranty reports from all VDECS manufacturers. The numbers are, however, consistent with ARB's findings that filter related warranty claims are only 0.6 percent of total retrofit sales. Most claims are associated with accessories and electronic components of the device rather than the filter element itself. These claims may include monitors, thermocouples, wiring, brackets etc. In general the total claims for active devices tend to be slightly higher due to the larger number of components making up actively regenerated VDECS. Our MECA member survey concluded that filter-related issues for both active and passive filters are a small fraction of total claims and occur on less than 1 percent of devices in the field. They are most often related to early filter plugging due to increased engine-out PM for a number of possible reasons such as: a significant change in the duty cycle from that used in the retrofit pre-

assessment of the vehicle, worn injectors, leaky turbocharger seals, EGR valve failure or charge air cooler leaks, among others. Operators have sometimes claimed that it was the VDECS that caused these engine problems. In most cases, following up the necessary repairs by instituting a manufacturer recommended maintenance schedule on the engine has prevented a reoccurrence of the problems with the filter or the engine. Because retrofits applications are pre-assessed and designed with a specific application and worst case duty-cycle in mind, prior to device selection and installation, they deliver reliable operation provided that good engine and device maintenance practices are followed and the vehicle is operated in a way that is similar to the way it was datalogged.

There is limited information in the literature on the warranty rate of retrofit DPFs, however, a 2003 survey (SAE Paper 2004-01-0076) of 3,848 construction retrofit DPF installations from 2001 to 2003 in Europe found a failure rate of only 1-2 percent, after some early issues were addressed. The root causes of these failures included poor filter cleaning and poor engine maintenance practices, as well as, ignoring of warning alarms by the operators. The latter problem is often observed by VDECS manufacturers and can be easily diagnosed from the data captured on the device monitor. In some cases device monitor records have shown that the trucks continued to operate for days or weeks after an alarm was triggered.

Other published retrofit experience can be found in a number of technical papers published by the Society of Automotive Engineers (SAE). The experience in these papers involved hundreds of diverse on-road vehicle types operated over millions of miles over a period of several years. These programs had prescribed maintenance practices and there were few issues with devices observed beyond an occasional failed bracket. In one such program, half of the New York City bus fleet was retrofitted with DPFs and the other half was used as a control population (SAE Technical Papers 2001-01-0511 and 2002-01-0430). Each fleet of vehicles represented several hundred municipal buses. After a year of normal operation, with proper maintenance, they observed no statistical difference in down time between buses equipped with DPFs and those that were not. At the conclusion of the program, the city decided to retrofit the remainder of the buses in its fleet with DPFs. There are many such examples of real-world demonstrations that support the performance and durability of DPFs provided that engines and devices are properly maintained.

Another piece of retrofit misinformation that has been shared at workshops and public hearings in California has to do with the tendency of DPFs to cause vehicle fires. As a point of reference, from 2004-2006, the U.S. Fire Administration reported approximately 258,500 roadside vehicle fires per year, including over 15,000 truck fires and over 2,500 bus fires, none of which involved a DPF. Subsequent reports showed that from 2007 to 2012, as the fraction of filter equipped trucks in the U.S. truck population increased, the annual average number of truck and vehicle fires didn't increase but rather dropped by 33 percent to 172,500 in 2012. Over 75 percent of these fires were caused by electrical or mechanical malfunction. Stakeholders point to the isolated and unfortunate incident in Washington State that lead to a fire and was attributed to a particular DPF technology that contained a metallic filter core (the vast majority of DPFs used in the U.S. and other world markets contain ceramic filter elements). This particular technology was subsequently recalled by ARB and the metal cores are being replaced by ceramic

cores. Although this technology passed ARB's rigorous verification program, no testing can simulate all the possible operating conditions and maintenance practices that may be experienced in the real-world. The investigation of this one incident has not been concluded, however some early reports suggest that a combination of engine component failure and operator error may have contributed to the DPF failure in Washington State.

Importance of Proper Installation and Maintenance

Proper integration of emission control technology on vehicles and equipment is important for three reasons: 1) to ensure the system is installed at the appropriate place in the exhaust to optimize effectiveness, 2) to ensure the system physically fits in the available space, and 3) to ensure safety. Over 30 years of experience in integrating emission control technologies on a variety of diesel and spark-ignited vehicles and equipment ranging from less than 25 hp to over 750 hp provides a clear indication that emission control technology can be successfully integrated on a wide range of vehicle types. An important requirement for installing emission control technology on on-road vehicles is to ensure that the device can withstand the vibration and/or extreme operating conditions associated with the operation for hundreds of thousands of miles at highway speeds. Emission control technology can be designed, installed, and operated to provide effective, reliable, and durable performance under these extreme conditions. Exhaust emission control technology has been integrated on vehicles to address special operating concerns and environments. For example, where equipment is used in explosive operating environments, such as underground coal mines, emission control technology has been designed to meet special surface temperature requirements. Surface temperature measurements conducted by MECA members have demonstrated that DPF surface temperatures are no higher than the OEM mufflers and in some cases actually lower. Surface temperature issues are often addressed by the use of heat shielding in cases where vehicle operators or maintenance personnel may inadvertently come in close proximity to hot surfaces.

Before a retrofit can be installed on a vehicle, the condition of the engine and a worst case duty cycle for the vehicle operation must be evaluated so the right device is installed. MECA provides a checklist of what should be considered as part of this pre-installation retrofit suitability evaluation that is performed by the installer. As required under ARB's verification regulation, VDECS manufacturers must provide their own criteria for identifying poorly maintained or malfunctioning engines.

Once installed, the importance of proper engine maintenance cannot be overemphasized for the durability and long term performance of the vehicle and DPF. Regular maintenance becomes critical once a DPF is installed because the presence of smoke in the exhaust can no longer be used as an indicator of engine operation problems. High smoke opacity could be a sign of excessive oil consumption or a bad fuel injector, both of which result in high engine-out PM that may lead to plugging of the filter. Once a DPF is installed in the exhaust system, it will capture the PM and mask any signs of high smoke. Therefore MECA believes that it is good regular maintenance practice to have an opacity-based check of the engine-out exhaust, each time a filter is removed for cleaning. An opacity test is an inexpensive, simple measurement that should be an integral part of a proactive preventative maintenance program. This measurement

has been required for on-highway vehicles for some time. The SAE standard (J1667) provides a recommended practice for performing an opacity measurement. Performing an annual, engine-out opacity measurement is a way for fleets to actively monitor the condition of their engines and perform the necessary maintenance to keep their equipment functioning within the engine manufacturers recommended guidelines and minimize the chance of filter plugging. This will have the added co-benefit of better performance and longer engine life.

Cost of Diesel Retrofit Devices

Several times during the December 2013 workshops, the question around the high cost of VDECS was raised by stakeholders. We would like to lay out a few of the less obvious cost components that factor into the cost of a technical device like a DPF. Long before the first device is sold, VDECS providers must undergo a rigorous verification process with ARB that requires emissions testing and a field durability demonstration. The verification process requires a thorough failure mode and safety analysis. All candidate VDECS technologies must complete a minimum of 1,000 hours of on-vehicle durability demonstration. Each DPF technology requires between \$1-2 million of up-front investment to develop and verify. Before their initial investment is recovered, manufacturers are required to perform in-use compliance testing to demonstrate that devices in the field continue to operate as verified. In-use testing requires significant resources at an added cost of approximately \$500,000 per Level 3 technology. As verification regulations get amended and requirements change, manufacturers are asked to redesign and reinvest to re-verify their devices under the new requirements. Continual changes to the verification regulation are another example where amending rules mid-stream drives up costs. For example, the cost of retrofits was significantly increased by requiring a 20 percent NO₂ emissions limit from Level 3 plus VDECS versus the original 30 percent NO₂ limit. This required manufactures to redesign and re-verify their previously approved technology. This single change in the regulation drove up the cost of DPFs by as much as a 25-35 percent with no additional PM reduction. Furthermore, the additional 10 percent reduction in NO₂ negatively impacted regeneration of the filter and limited the number of engines that would qualify for a retrofit. The catalyst formulations on the original 30 percent NO₂ emitting Level 3 devices were very similar to the ones used on 2007 OEM systems which don't have NO₂ emission limits but yet qualify as a compliance option under this rule. In 2013, off-road VDECS manufacturers were required to re-verify existing systems using the Non-Road Transient Combined (NRTC) test cycle. This, along with the 2010 amendments to the off-road fleet rule drove several manufacturers out of the off-road VDECS market.

Warranty costs also factor into the price of a VDECS. Retrofit manufacturers must provide a five year or 150,000 miles warranty. The same filter technology installed on a new truck only comes with a five year/100,000 mile warranty. Retrofit installers must include the installation costs along with a separate installation warranty for the same duration as the manufacturer's warranty. Both the manufacturer and the installer are required to submit annual warranty reports that are subject to recall provisions if warranty claims exceed 4 percent of any component on the device. There are many costs and risks that must be factored into the price of a device if a company expects to remain competitive and survive. As part of their business strategy, technology providers rely on regulatory stability in order to develop their business plans,

justify the investments and competitively price their devices. Not factored into the price are repeated regulatory changes which contribute to driving up the cost of VDECS. Regulatory uncertainty makes it extremely difficult for manufactures to develop a marketing plan, follow their business strategy, plan their resource needs, forecast their inventory, and achieve economies of scale in their manufacturing process.

California's Need for a Statewide Diesel Inspection and Maintenance Program

Under the current proposal, the compliance with ARB's truck and bus regulation relies even more on the purchase of used 2007 and later model year trucks equipped with advanced exhaust emission controls. The original equipment 100,000 mile emissions warranty that comes with a new truck has often expired by the time the truck is resold. This is particularly true if the truck is used in interstate long-haul operations where the accumulation of 100,000 miles may take less than 9 months. The used 2007 and 2010 trucks being brought into the fleet to comply with this regulation will need to be maintained to perform at their originally certified emission levels. In the absence of any specific emissions warranty, the truck owner will be responsible to maintain the emission control system and purchase any necessary replacement parts for the system to deliver the expected emission reductions.

Furthermore, as OBD systems will not be fully implemented across all engine families until 2016, there will be a decade of emission controlled trucks in the fleet with little or no emissions monitoring. Used truck owners will be required to invest in maintaining the engines and emission controls in order for them to continue to function. Because the engine-out emissions are very low on these newer engines, without an inspection and maintenance program, like the light-duty Smog Check, it is not possible to rely on visible smoke to spot a truck that may have a compromised or missing emission control devices under California's existing roadside enforcement program. In order to realize the emission reductions expected by this regulation, MECA urges the Board to work with the legislature to establish requirements for a robust, heavy-duty diesel I/M program. A heavy-duty diesel I/M program might offer the state a mechanism to receive SIP credits for the delivered emission reductions in much the same way that I/M affords for California's Smog Check program on light-duty vehicles.

A heavy-duty diesel I/M program could further justify the development of a diesel aftermarket regulation that would create a competitive market for heavy-duty diesel aftermarket parts. Aftermarket emission control parts would offer a cost effective alternative to original equipment replacement parts and allow end users to maintain the emission control systems on their used 2007 and newer filter equipped trucks.

Conclusion

In closing, we thank the ARB staff for their hard work and perseverance in responding to the direction of the Board in bringing forth this proposal. Staff has worked closely with all interested parties to develop the proposed implementation strategies. Although the proposal does an excellent job of balancing additional flexibilities in the rule while minimizing the loss of emission reductions, we urge the Board to resist making further changes to the requirements to

retain the remaining emission benefits of this regulation. We believe that ARB needs to establish robust methods to enforce compliance with the rule. A number of the proposed flexibilities offer opportunities to abuse the system and we urge ARB to remain vigilant in their efforts to insure a level playing field for all stakeholders. As more new and used filter-equipped trucks make up the California fleet in response to this regulation, an opportunity exists for ARB to deploy resources towards a heavy-duty aftermarket parts and, inspection and maintenance program. MECA is committed to do our part to insure that emission control technologies are reliable available to comply with this regulation and look forward to working with ARB to deliver on their clean air objectives.

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