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**Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium- and Heavy-Duty  
Engines and Vehicles - Phase 2  
Comments submitted by President**

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**[SUBMITTED TO *www.regulations.gov* or BY OVERNIGHT AND ELECTRONIC MAIL]**

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**Introduction**

The International Union, United Automobile, Aerospace and Agricultural Implement Workers of America (UAW) appreciates this opportunity to comment on the Environmental Protection Agency (EPA) and Department of Transportation National Highway Traffic Safety Administration (NHTSA) proposed Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium and Heavy-Duty Engines and Vehicles—Phase 2 program (Docket No. EPA-HQ-OAR-2014-0827; NHTSA-2014-0132). We commend the EPA and NHTSA for their diligent work in crafting this proposal and working closely with the California Air Resources Board (CARB). We also appreciate the agencies' willingness to engage meaningfully with the UAW, our members, and other stakeholders on this important matter. This is a complex industry and crafting new greenhouse gas emissions and fuel efficiency standards for medium and heavy-duty engines and vehicles is an extremely difficult task.

Over the past two years, the UAW has actively engaged with our membership and listened to their concerns around this proposal. We have also had in-depth discussions with industry employers, environmental activists and regulators. We believe it is possible to craft a regulation that sets

reasonable standards while promoting good jobs and protecting the environment. Striking this careful balance will be difficult and the challenge it presents should not be understated.

The UAW represents over one million active and retired members, many of whom work in the motor vehicle assembly and part industries. We represent over 34,000 workers at Ford, General Motors, Freightliner, Navistar, Mack, Volvo, IC Bus, Thomas Built Bus and Oshkosh working in heavy-duty truck, vocational, van and heavy-duty pickup vehicle assembly, engine and component facilities throughout the United States. We also represent thousands more workers making parts for those vehicles at Dana, Detroit Diesel, Allison Transmission, Eaton and other parts makers. All of these workers, their families and their communities could be impacted by this proposal.

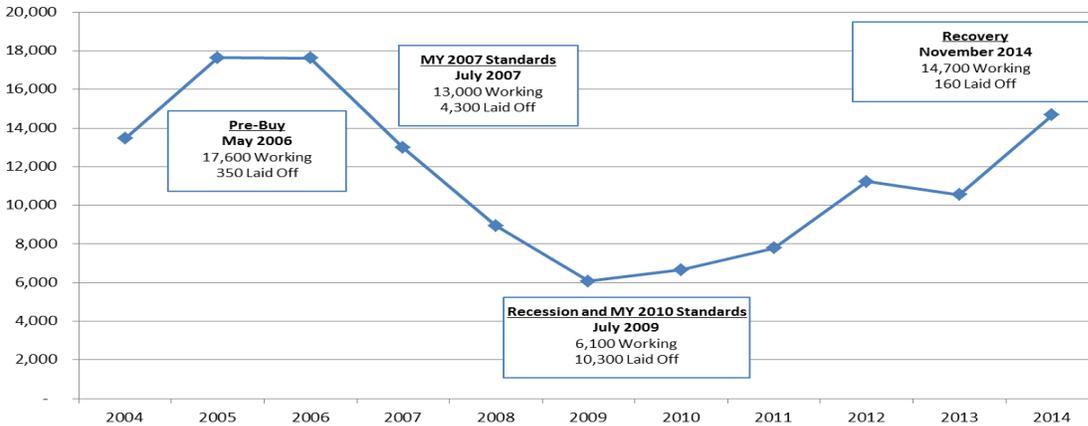
The UAW supports standards with sufficient lead time allowing for research and development of cost effective and reliable technology that will be accepted by the fleets and other customers. We reject the false calculus that environmental regulations always cost jobs. It is not a zero-sum equation. Thoughtful, well-constructed regulations crafted with input from stakeholders can protect the environment while simultaneously protecting existing jobs and creating jobs in new advanced technology sectors of the economy. This can be a win-win for the environment and the economy.

We urge EPA and NHTSA to tread carefully in order to avoid creating economic insecurity for the hardworking men and women who toil in the industries affected by this proposal. Any new regulations should not negatively disrupt the economy or create a “pre-buy/no-buy” cycle that results in layoffs or job losses for American workers.

A significant market disruption is not only bad for workers; it is bad for the overall economy, which is still recovering from the Great Recession. Layoffs, regardless of their duration, are obviously bad for the workers who lose their jobs. Surrounding communities are also negatively impacted as families suddenly have less to spend on housing, car payments, groceries, clothes and other essential and discretionary items.

This is not a theoretical concern for UAW members. In mid-2006, there were almost 18,000 UAW members working at Freightliner, Navistar, Mack, Volvo and Peterbilt. By mid-2007, the number of active workers was down to just under 13,000 with over 4,000 workers laid-off. This occurred before the Great Recession and market disruptions caused by regulations were undoubtedly a major factor.

In 2008, the number of laid-off workers increased to over 6,000 and in 2009, there were over 10,000 laid-off UAW members at those manufacturers. The chart below shows UAW membership in the industry from 2004 to 2014:



These are much more than statistics. UAW members not only lost their jobs, many of them lost their homes and the stress brought on by financial insecurity led to divorces and other family crises. We have no interest in repeating scenes of boarded up storefronts on our main streets or families losing their homes. In this vain, we strongly oppose Alternative Four which pulls stringency requirements forward from 2027 to 2024. Pulling the 2027 requirements forward may not only force unreliable and unproven technology to market, it is a de-facto increase in stringency requirements. Alternative Three is highly ambitious but could reach the proper balance if important modifications are made. Our concerns and recommendations are detailed in our comments.

### **Importance of the Motor Vehicle Sector**

The United States' motor vehicle sector is large, profitable and competitive. The domestic motor vehicle industry is vital to the U.S. economy and it is imperative that we remain strong and competitive. Nearly 900,000 people worked in auto and auto-parts manufacturing alone. When jobs from other sectors that are dependent on the industry are included, the auto industry is responsible for 7.25 million jobs nationwide, or about 3.8% of private-sector employment. The industry generates tens of billions in tax revenues across the country.

The motor vehicle industry is in many ways the cornerstone of our manufacturing sector. The economic impact of the standards on the entire supply chain must be taken into account when analyzing the proposed regulations.

### **Creating a Win-Win**

We support President Obama's Climate Action Plan reducing emissions of greenhouse gases, building clean energy infrastructure, increasing energy efficiency in our homes and workplaces and creating new jobs in advanced and green technology industries. Energy efficiency and renewable energy sources offer a path to energy independence and an environmentally sustainable and economically beneficial future.

The need to address climate change is real and urgent. We must act to protect our future and the future of our children and grandchildren. There is no scientific debate on the connection between fossil fuel consumption, rising carbon dioxide levels in the earth's atmosphere, and climate change. Climate

change is real, and we ignore it at our own peril. Scientists continue to research the impact of carbon emissions on our planet, but even the “best case” models are sobering – and the worst are catastrophic. According to the latest report from the United Nations’ Intergovernmental Panel on Climate Change, the potential future effects of climate change include increased risk of extinction for many species, risks to fisheries and crops, reduced access to fresh water and more extreme storms that threaten coastal cities. By mid-century, just a few decades from now, devastating storms like Sandy in 2012 or Katrina in 2005 may become regular occurrences. The need for a comprehensive strategy to address climate change could not be clearer. There are no silver bullets and action is needed on many fronts.

To see how these types of policies can support good jobs, look no further than the auto industry. In 2012, after extensive discussions that involved environmental advocates, motor vehicle manufacturers and the UAW, the National Highway Transportation Safety Administration and Environmental Protection Agency finalized new Corporate Average Fuel Economy (CAFE) standards to raise the average fuel economy of passenger vehicles sold in the United States to the equivalent of 54.5 miles per gallon by 2025. By providing regulatory certainty, the 2017-2025 standards have already spurred investments in new products that employ thousands of UAW members. These are good, permanent jobs. The standards will also eliminate 2 billion metric tons of carbon pollution, reduce oil consumption by over 2 million barrels a day and save a typical consumer over \$8,000 in fuel costs in a MY 2025 vehicle. This is not to imply that there have been not significant challenges in implementing the regulations and more challenges are likely to occur in future years.

We urge EPA and NHTSA to ensure that the new regulations do not create economic uncertainty for working families by creating significant market disruptions. In order to achieve this goal the final rule must be consistent with the following principles:

- Regulations Cannot Disrupt the Market
- Single National Program
- Regulatory Certainty
- Accurate Technology Market Penetration, Cost and Reliability Assumptions and Testing Protocols
- Flexibility to meet stringency standards

### **Regulations Cannot Disrupt the Market or Create Economic Uncertainty for Working Families**

As previously mentioned engine regulations in the past have had adverse economic consequences and contributed to a pre-buy/no-buy boom and bust cycle. This proposal must guard against creating these conditions. Severe market disruptions would not only be bad for workers, they would also be bad for the environment and would undermine the regulation’s foundational goal of reducing harmful greenhouse gas emissions and increasing fuel efficiency. If fleets and other customers pull ahead truck purchases due to concerns about increased cost or unproven technology, the end result is more higher-polluting and less fuel efficient trucks on the road for a longer period of time.

UAW members in this industry suffered economic hardship caused by regulations during the last decade and we are sensitive to the potential impacts of Phase 2 regulations and are watching this process closely. The EPA established a comprehensive national program establishing emission standards in 2007 and 2010 for diesel engine emissions of oxides of nitrogen (NOx) and particulate matter (PM). The regulation's intent was to reduce the harmful emissions of NOx and PM from the truck fleet by 90 and 95 percent respectively, dramatically reducing the threat those pollutants posed to public health.

Many truck fleets and other customers, weary of increased costs and new and possibly problematic technology, pulled ahead truck orders prior to the implementation of the 2007 standard. The effect of this pre-buy was felt by the thousands of UAW members and other workers who worked overtime building as many legacy engines as they could prior to the standard and then were laid off once the standards took effect.

Overall UAW membership in the medium and heavy-duty truck sector did not meaningfully recover until 2012. It would be an error to attribute the lay-off of 10,000 UAW members in 2009 solely to the pre-buy associated with the 2007 engine standards because clearly, the Great Recession and the closure of an assembly plant were also major contributors to the downturn in overall sector employment and UAW membership. However, it is important to understand that some of these workers only returned to work within the last few years. Truck makers are hiring new workers for the first time in many years and workers are concerned about the potential of the negative impact of regulations.

The UAW members' stories below illustrate struggles faced by thousands of workers during the downturn in the industry.

Karen is a temporary worker at Mack who lost her job in late 2006 and didn't return until 2011.

Karen comes from a "Mack Family." Her father, uncles and cousins all work there. She was excited to follow in her dad's footsteps and be a part of his legacy. She started as a temporary employee building engines during the pre-buy. Even though it was temporary, the job provided good benefits and a lot of overtime.

Karen knew about the ups and downs of the industry. She remembers her dad being laid off when she was growing up. She also knew that she was working during the pre-buy, "We knew the layoffs were coming. They were not a surprise." The workers in her plant all signed the last legacy engine as it moved down the assembly line. Karen, like many of her co-workers, hoped that the layoffs would be short and they would quickly be called back to work. Karen's plan was to come back, get a permanent position at the plant and have a long career at Mack, just like her dad.

After Karen lost her job, she went back to farming, "My family, we are farmers." Fear of one of her three kids getting sick was constantly at the back of her mind, "I crossed my fingers and was very lucky." She couldn't find another job with medical benefits.

Planning ahead helped. Karen had earned her Commercial Driver's License while working as a temp at Mack and was able to get a job driving trucks for a subcontractor at the Mack plant. But, the job didn't provide any health insurance. She worked as a driver until 2011.

In 2011, the phone rang. It was Mack calling Karen and many of her former co-workers back. A lot of workers were excited about returning to Mack.

Those years without medical benefits were "very trying and very hard." Losing jobs "ruins people's lives." Karen witnessed lost homes and broken families. She wants regulators to think about her and her co-workers and to "imagine what it is like not to have work, not have benefits."

Brett is another temporary worker who was laid-off after the pre-buy and didn't go back to work at Mack until 2011.

For Brett, working at Mack meant better pay and benefits and most importantly, a path to a better future. He worked a lot of overtime and looked forward to the chance to become a permanent full-time employee.

When he was laid-off, Brett went back to driving a delivery truck. He had just built a house and "didn't know how I was going to make my mortgage payments."

He was finally called back in 2011 and became a permanent employee in 2012. He was glad to be back and the best part of his job is the economic security.

Chad is a single father who hoped to get his foot in door at Mack.

Chad's family is the most important thing in his life.

He was hired to build engines during the pre-buy and laid off after 89 days. He took the temporary job knowing that he would be laid off. But he wanted to get "his foot in the door" and eventually get a permanent job at Mack. They are good jobs. When he was laid off, his managers told him, "Hopefully, we'll see you soon." It took six years.

Chad "scrounged around" working low-paying jobs. He worked as a landscaper and mowed lawns every weekend just to get by. It was like a "roller coaster, very scary." Mack called Chad back to work in 2012.

The possibility of another pre-buy or economic disruption is very stressful. "It could easily be me again on the street, a repeat of 2006." Chad will fight as hard as can for his job and family.

Chad wants regulators to understand that he has a family to support. "I need a job. I'm just trying to make a living." He's not trying to take away anyone else's job and they shouldn't take away his job.

For Karen, Brett and Chad and the thousands of other UAW members working in the industry, the threat of economic disruption is real and not a distant memory.

### **A Single National Program**

The Phase 2 standard has to be a single National Program--harmonized and applicable in every state of the country. California is the only state with the ability to adopt its own motor vehicle standards per the Clean Air Act. We urge EPA and NHTSA to continue information sharing and communication with the CARB to develop a single harmonized National Program. To do otherwise, is inconsistent with the realities of the market.

### **Regulatory Certainty**

A metaphor for a successful regulation is the three legs of a stool—cost, technology and stringency. Each of the legs must balance out the other two for the stool to stand. Regulatory certainty, flexibility, and timing are the primary tools regulators use to balance the stool.

The medium and heavy duty truck industry is already working to comply with the Phase 1 Greenhouse Gas Emission and Fuel Efficiency Standard that is projected to save 530 million barrels of oil and reduce carbon emissions by 270 million metric tons. This is a challenging task and is by no means the only regulatory environmental mandate faced by this sector. Regulations requiring emissions reductions over the past several years have required substantial industry investments. In fact, we do not know the full impact of prior regulations as comprehensive data is only now being gathered and analyzed for the 2014 model year. The new data should be carefully evaluated and compared to the estimates and assumptions used to formulate both Phase 1 and the proposed Phase 2 of the heavy duty regulations.

The current proposal is expansive and complex. The impact of costs associated with development and production costs should be taken into account while drafting the final rule, including any costs associated with disruption of program and capital cycles. It also covers a lengthy period of time as the proposed regulations would be in effect until 2027. Regulatory certainty is an essential part of the industry's ability to develop and market new advanced technologies and maintain product cycles meeting stringency requirements.

This proposal does not exist in a regulatory vacuum. We urge EPA, NHTSA and other regulatory agencies to refrain from altering intersecting regulations in a way that affects Phase 2 standards outside of existing timelines and benchmarks. This is a major concern in light of the numerous initiatives the Administration has undertaken to combat climate change.

We know that regulators are fully aware of the trade-off of NOx and CO2 reduction targets and the intersection of those sets of regulations. However, there are many other regulatory programs that may impact GHG emission programs. For example, another intersecting regulatory program is the EPA's Significant New Alternatives Policy (SNAP) program. In 2014, the UAW opposed a SNAP proposal to list HFC-134a as unacceptable for use in newly manufactured light vehicles by model year 2021. This change impacted light vehicle manufacturers' CAFE compliance strategies. Essentially, EPA's SNAP

program took away an important tool original equipment manufacturers (OEMs) were using to meet the standards. It was a regulation that was not contemplated when UAW worked with stakeholders on light duty standards. The SNAP program impacted the agreement reached by the EPA, NHTSA, and UAW, automakers, environmentalists and CARB. Clearly a similar scenario can occur in the future in conjunction with this proposed regulation, all the more reason why the final rules should be flexible and designed with caution.

### **Accurate Technology Market Penetration, Cost and Reliability Assumptions and Testing Assumptions**

Medium and heavy truck manufacturers have overcome challenges meeting Phase 1 stringency requirements that were developed assuming market adoption of existing off the shelf technology. Phase 2, in contrast is technology forcing.

The UAW supports developing and bringing new technology to the fleet as long as the technology is reliable, cost effective and manufacturers have more than one technology path to comply with stringency requirements.

We strongly agree with the EPA and NHTSA's warning that poorly crafted regulations forcing unproven technology can lead to:

Expectations of reduced reliability, increased operating costs, reduced residual value, or of large increases in purchase prices can lead the fleets to pull-ahead by several months planned future vehicle purchases by pre-buying vehicles without the newer technology. Such market impacts would be followed by some period of reduced purchases that can lead to temporary layoffs at the factories producing the engines and vehicles, as well as at supplier factories, and disruptions at dealerships.

The stringency of the Phase 2 standards must be crafted with the realities of the market in mind. As we have seen, regulations requiring customers to buy technology that are not proven or cost-effective lead to unintended consequences as customers often keep their vehicles longer or pre-buy vehicles in advance of new standards.

The draft stringency requirements assume market penetration rates for technologies. If those assumptions are inaccurate, the regulation will be undermined as customers are forced to adopt technologies that are not cost effective or do not provide real world benefits. We have heard credible concerns from several stakeholders regarding penetration rates and costs of several technologies discussed in the draft proposal. For example, assuming a 15% penetration rate for waste heat recovery by 2027 seems overly optimistic considering it is not currently in the market. The proposal also assumes this technology will cost up to \$11,000. Of course, the actual costs are unknown and new technology often cost more than anticipated. Moreover, the additional costs for maintenance and downtime need to be fully accounted for. Also, the potential benefits of waste heat recovery vary substantially depending on the duty cycle and powertrain. The same can be said for other new technologies.

The 60% penetration rate for 6x2's is potentially problematic considering that six states have laws limiting tire and axle loading in such a way that 6x2's cannot be used as intended. Fleet owners are not likely to purchase trucks that cannot operate in all 50 states.

We have heard repeated concerns from our employers that the proposed emission standards might inadvertently be more stringent than EPA had intended. For example, the assumed 2017 aero baseline uses the *best* aero trucks available, not the average. This baseline increases stringency by roughly 2.5%. The compliance margin for aerodynamic audits has been removed. Therefore OEMs would have to report worse aero performance to ensure passing an audit, with as much as 5% impact.

No compliance margin is provided for engine fuel map audits, compared to the 3% margin allowed in Phase 1 for engine efficiency. Consequently OEMs will likely declare lower engine efficiency than their certification measurement to ensure meeting stringency. In sum, faulty assumptions driven by technology penetration rates, the absence of audit compliance margins could add as much as 17% greater reduction in fuel consumption than the proposed rule estimates. If not addressed, this could prove to be an untenable threshold and market disruptions could very possibly follow.

Underestimating the costs of technologies could further complicate compliance and lead to unintended consequences. Higher technology costs lengthens payback period. New technologies generally require increased warranty costs, increased maintenance costs, and costs associated with increased downtime. We urge EPA and NHTSA to reexamine their cost assumptions to ensure they are based on the most accurate data.

UAW members and their families remember the disruption of forcing unproven technology to market and urge the EPA and NHTSA to strive for a regulation that promotes fuel-efficiency and emission reducing technology that is cost-effective and reliable for a market that is sensitive to cost of ownership and real world operational benefits. If customers have to buy technologies just so an OEM can reach a target, they are more likely to pre-buy. We strongly support ongoing dialogue between the EPA, NHTSA and other stakeholders that aim for continuous improvement in testing protocols and cost estimates.

### **Flexibility Required to Meet Stringency Requirements**

Manufacturers need flexibility to meet stringency standards via a mix of different technologies and paths based on competitive advantages, market position, brand, customer demands and product cadence. Stringency requirements must recognize customer expectations, vehicle work and functionality requirements, product cadence, lower volumes and cost structure of the market. Final regulations should not be overly prescriptive.

The draft proposal calls for a whole vehicle and separate engine standard. The final regulations should not include an engine standard that OEMs will have a difficult time complying with. It is a consolidated market place and an overly stringent standard could lead to monopoly pricing. An overly stringent engine standard could also lead to the very boom bust cycle we are seeking to avoid. There is nothing in this regulation to prevent OEMs from investing in more efficient engines and gaining credits that could be applied to meet stringency requirements. OEMs should be free to meet the stringency

standards in the way that best suits their business model. These regulations rightfully should offer pathways on how to meet the standard but should not dictate the path a given company takes.

The UAW strongly supports an Averaging, Banking and Trading and Off-Cycle Technology credit program that “plays an important role in making the proposed technology-advanced standards feasible, by helping to address many issues of technology challenges in the context of lead time and costs.”

The credit system works well and is essential in the heavy-duty pickup and van sector because the year-over-year stringency requirements do not reflect the reality of product cycle and the small number of platforms in the segment. Extended carry-forward time in light duty regulation, encourage manufacturers to make greater improvements sooner because surplus credits will not expire. This model should also be applied to the medium and heavy duty segments. We urge EPA and NHTSA to examine ways to enhance the existing credit program to account for the realities of the market.

### **Implementation an Off Cycle Credit Pick-List**

We support American Automotive Policy Council’s proposal to implement an Off Cycle Credit Pick List. A “pick list” or “menu” would give Class 2b and Class 3 vehicles regulatory credit for greenhouse gas emissions reductions that result from the use of various “off cycle technologies.” A pick list exists for light duty vehicles, and this proposal contains pre-assigned credits for the real world benefits of various technologies used in Class 7 and 8 tractors and vocational vehicles. A Class 2b/3 pick list give real world benefits on these vehicles beyond the benefits on the standard fuel economy tests. Finally, the off cycle credit provisions should avoid extensive requirements for additional testing or for meeting other criteria, caps or thresholds, in order to encourage further innovation.

### **Conclusion**

The final regulations must continue to reflect the flexibility needed to regulate working vehicles with a wide range of applications. The UAW strongly believes that Alternative Four is not workable and should be rejected. Alternative Three can and should serve as the model for the final regulations, but needs to be refined to address the concerns raised above.

The UAW appreciates the opportunity to submit comments on this important proposal. We are looking forward to working with EPA, NHTSA, CARB, and other stakeholders to create a final rule that is consistent with our shared goals and values.