Dear Administrator McCarthy:

On behalf of the North American Die Casting Association (“NADCA” or “Association”); please accept these comments on the U.S. Environmental Protection Agency (EPA) and National Highway Traffic Safety Administration (NHTSA) proposed rule to address Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles (Phase II). While NADCA believes the Administration did not provide sufficient time for the public to provide input given the length and scope of the proposal, the Association hereby submits these abbreviated comments on the die casting industry’s capabilities and role in improving efficiency performance.

NADCA is the sole trade and technical association of the die casting industry, representing members from over 350 companies located in every geographic region of the United States. Die casters manufacture a wide range of non-ferrous castings, from automobile engine and transmission parts to intricate components for computers and medical devices. In the U.S., die casters contribute over $7 billion to the economy annually and provide over 50,000 jobs directly and indirectly.

**Die Casting R&D, Material Substitution, and Lightweight Capabilities**

Die casting is a versatile process for producing engineered metal parts by forcing molten metal under high pressure into reusable steel molds. These molds, called dies, can be designed to produce complex shapes with a high degree of accuracy and repeatability. Parts can be sharply defined, with smooth or textured surfaces, and are suitable for a wide variety of attractive and serviceable finishes.

NADCA members use a number of metals including aluminum, magnesium, zinc, copper, lead, and tin, among others. Thin wall castings are stronger and lighter than those possible with other casting methods, and particularly in the case of aluminum, increasingly serve as a material substitution in the manufacturing and design process. In addition, because die castings do not consist of separate parts welded or fastened together, the strength is that of the alloy rather than the joining process.
Since the early 1990’s, NADCA has managed and coordinated over 90 high performance alloy, die material, modeling, and energy efficiency R&D projects totaling $48 million with government agencies, universities, national laboratories, and industry. Working with established partners, NADCA is the leader in die casting process technologies, cast materials, die materials and coatings, die casting related energy and environmental technology, and technology transfer. In close partnership with key universities and die casting companies, NADCA has access to an abundance of analytical and mechanical property testing equipment, melting and casting equipment, and computer modeling program and expertise.

A few NADCA past and current projects achieving cost savings and performance improvement include:

- Department of Energy Advanced Manufacturing & High Performance Castings –Cast Metals Coalition Energy-SMARRT Program funded with $10m from the Dept. of Energy Office of Advanced Manufacturing; and the High Performance Casting (HyperCAST) Program with $2m from the DoE Vehicles Technology Office.

- America Makes-NAMMI – NADCA is partnering with Case Western University as part of the National Additive Manufacturing Innovation Institute, the first National Network for Manufacturing Innovation center.

- New classes of die casting alloys in thin wall structural components have high ductility (elongation = 10%) and high strength (YS = 35 KSI) when placed in a short term T6 heat treatment. These alloys have also been shown to have three times higher impact strength, and in some cases, 100 times higher fatigue lives as well. These alloys have also been shown to have three times higher impact strength, and in some cases, 100 times higher fatigue lives as well.

- High Performance Alloys – This project is based on light-weighting for various applications through the further development and use of die castable nano-composite aluminum and magnesium based alloys. New classes of die casting alloys in thin wall structural components have high ductility (elongation = 10%) and high strength (YS = 35 KSI) when placed in a short term T6 heat treatment.

While NADCA does not endorse a specific weight reduction amount, die castings represent a clear opportunity to help achieve improved fuel efficiency and weight standards. As noted in the NPRM, "some materials work better than others for particular vehicle components,” and NADCA believes regulators should provide manufacturers with the ultimate flexibility to meet realistic standards.

**Nationwide Standard as a Ceiling, not Floor**

Regardless of whether regulators move forward with Phase II, manufacturers and consumers need a single nationwide standard. This applies not only to overall efficiency reduction targets but also to types of permissible vehicles and weight loads transported across state lines. Manufacturers and shippers face major hurdles meeting the regulations of various states, often causing transportation delays, rerouting, and confusion.

In this instance, we strongly encourage regulators to establish these rules as a ceiling rather than a floor for states to follow. Manufacturers are concerned certain states may take steps to go beyond the federal rule and create more stringent regulations. This not only creates significant confusion throughout the industry, it effectively forces manufacturers to go beyond federal guidelines, particularly in the case of a state as large and economically significant as California. It is simply not feasible to expect manufacturers to invest heavily to meet the federal standard only the have the bar moved again by each state.
Timing, Feasibility, and Cost-Benefit Analysis

NADCA believes that die castings are a central part of any effort to improve fuel efficiency and performance of all vehicles, whether light, medium, or heavy-duty. As demonstrated above, the die casting industry is capable of helping achieve significant efficiency improvements, however, the Association cannot speak directly to questions surrounding the overall feasibility raised by OEMs and others. NADCA does support comments made by a number of groups that Alternative 4 is not feasible at this time and regulators should reject pressure to adopt these standards.

In general, NADCA supports the market dictating which technologies manufacturers adopt. Businesses invest billions each year to meet the demand of customers who we are concerned may hold on to older vehicles longer to avoid paying for costly new trucks they may not immediately need. As downstream manufacturers, our customers are constantly demanding price reductions and we must meet those demands to remain competitive. Similarly, purchasers of medium and heavy-duty vehicles are sensitive to increased costs and will delay paying for a higher priced truck despite longer term fuel savings. In addition, freighters will inevitably increase their shipping costs and pass those along to their customers, many of whom are small and medium sized businesses such as NADCA members.

NADCA is also concerned about the cost-benefit analysis conducted and encourages the Administration to adopt more realistic expectations of the expenses involved in the research, development, and commercialization of these new technologies. The Association and its members invest millions each year to develop new technologies and the latest production methods to improve their global competitiveness. A concern raised by others is not only the costs involved with investing in the research, but also whether customers will pay a higher price for the finished product as manufacturers must ultimately pass along some of the additional costs to the purchaser.

Conclusion

NADCA believes that the markets and not regulators should drive the market’s development of new technologies, particularly when customer demand is lacking. However, should the Administration move forward with the Phase II standards, we encourage regulators to adopt a nationwide ceiling with achievable standards rejecting Alternative 4.

As demonstrated in Phase I and reinforced in the Phase II proposal, regulators clearly see that aluminum, and therefore cast parts, are an integral component to weight reduction and energy efficiency. We urge the EPA and NHTSA to explore the opportunities metal castings provide. Through its direct research and partnerships with industry and universities, NADCA has a demonstrated track record securing energy and cost savings.

Thank you for your consideration of these comments and we look forward to working with you to strengthen manufacturing in America.

Sincerely

Daniel Twarog
President
North American Die Casting Association