

## Summary of California Phase 2 Symposium

On April 22, 2015, the California Air Resources Board (ARB) held a symposium regarding California's efforts with the U.S. Environmental Protection Agency (U.S. EPA) and the National Highway Traffic Safety Administration (NHTSA) to develop proposed Federal Phase 2 Greenhouse Gas (GHG) Emission Standards for Medium- and Heavy-Duty Trucks. The federal Phase 2 standards will be proposed when the U.S. EPA publishes the Notice of Public Rulemaking (NPRM) and will build upon the federal Phase 1 GHG emission standards adopted by the U.S. EPA and NHTSA in 2011. The symposium provided an opportunity for ARB and stakeholders, including relevant government agencies, nongovernmental organizations, truck and engine manufacturers, and fleets, to provide their expectations and concerns about the regulation under development. During the symposium, various stakeholders had the opportunity to give presentations and ask other stakeholders questions, ensuring an exchange of ideas.

The symposium was organized into a series of sessions. In each session, representatives from similar types of organizations presented, followed by a question and answer session of questions from the audience to a panel consisting of the presenters of that session. The first session consisted of presentations by government agencies, including ARB, the Northeast States for Coordinated Air Use Management (NESCAUM) and the U.S. Department of Energy (DOE). The presentations in this session discussed the contribution of heavy-duty vehicles to emissions, the extent of the challenges California and other states face in meeting ozone standards and GHG emission reduction goals, and DOE's efforts to help develop much more efficient trucks through its SuperTruck program. Commenters were interested in knowing whether NESCAUM is considering adopting California's optional low oxides of nitrogen (NO<sub>x</sub>) standards and potential impacts. NESCAUM responded that some states may consider California's optional low NO<sub>x</sub> standards if future federal action is insufficient to meet their needs. Commenters also asked about future steps for the SuperTruck program and learned that DOE is planning a second phase of the SuperTruck program.

During the second session, ARB provided updates regarding the agency's ongoing Engine/Powerplant Optimization and Vehicle /Trailer Efficiency and Heavy-Duty Hybrid Vehicles technology assessments. The presentations gave overviews of the technologies included in the assessments, as well as provided simple cost and payback analyses. Some commenters expressed concerns that the cost estimates and payback periods were too optimistic and should also take into consideration other costs typically incurred by fleets, including added maintenance costs and taxes. ARB staff expressed that these cost analyses are a preliminary analysis of future technology and will be refined after the U.S. EPA publishes the federal Phase 2 NPRM, and also that not all technologies necessary for public health and environmental protection necessarily have a payback at all.

The third session gave the perspective of the non-governmental organizations. The Union of Concerned Scientists, the International Council on Clean Transportation, and CALSTART each gave a presentation on its thoughts and findings regarding potential reductions that can be realized from a federal Phase 2 program. The presenters discussed potential emission reduction technologies and their costs, and there was also discussion about a sustainable fleet accreditation program for environmentally active fleets. Commenters were interested in the organizations' technology investigations and possible steps moving forward. The organizations will be looking closely at the Phase 2 proposal once it is released, and hope to learn more both from communicating with affected parties and from analyzing data from the federal Phase 1 program.

During the fourth session, manufacturers that would be affected by a federal Phase 2 program and their trade associations gave their perspectives and suggestions. The fourth session included seven diverse presenters, including truck and engine manufacturers and their trade association and a trailer manufacturer. Matching the diversity of the companies represented in this session of presentations, the perspectives and suggestions given varied greatly as well. Each manufacturer provided a description of some of the technologies it is developing to meet more stringent efficiency requirements as well as indicated their strong preference for a single national standard. Individual manufacturers differed on their perspectives of having whole vehicle standards only or having separate vehicle and engine standards, whether efficiency targets should be more or less stringent, the impact of eliminating separate gasoline and diesel standards, and which technologies are the most feasible. One speaker emphasized that trailers are helping increase the efficiency of trucks with significant improvements in aerodynamic technology.

The final session provided the opportunity for the end users of the technology, the fleets, to provide their perspectives as well. The presenters were Mesilla Valley Transportation and Rain for Rent. Each presenter gave an overview of strategies that his company has adopted to become more efficient, including adopting fuel saving technologies and purchasing fuel efficient or alternative fuel vehicles, as well as managing driver behavior through training and incentive programs. Commenters acknowledged that the efficiency increases were impressive, but wondered whether those savings resulted in a greater number of miles being driven.

ARB staff appreciated the material presented at the symposium, as well as the comments and questions from attendees. The symposium presentations and dialogue will help to inform California's evaluation of the federal Phase 2 program and consideration of its own Phase 2 program, expected in late 2016 or 2017.