

Federal Advisory Committee Act
Clean Air Act Advisory Committee
Mobile Sources Technical Review Subcommittee

Co-Chairs: Michael Walsh and Suzanne Rudzinski

Designated Federal Official: Joseph Bachman

Minutes of the Subcommittee's Meeting on September 13, 2005
Alexandria, VA

DRAFT January 18, 2006

Introduction

Mike Walsh (consultant, co-chair) and Suzanne Rudzinski (EPA, co-chair) called the meeting to order at approximately 9:00 a.m. The co-chairs welcomed attendees, introduced the new members, and reviewed the day's agenda. The meeting summary from the March 9, 2005 MSTRS meeting was accepted as final.

Presentations and meeting topics outlined in the agenda were as follows:

- A presentation on the National Commission on Energy Policy (NCEP) given by Drew Kodjak (NCEP)
- A fuels panel, including a presentation on the Renewable Fuels Standard (RFS) given by David Korotney (EPA); a presentation on the Department of Energy (DOE) Carbon Reductions Model GREET given by Michael Wang (Argonne); and a presentation on Biodiesel Potential given by Bob McCormick (NREL)
- A voluntary programs panel, including a presentation on Best Workplaces for Commuters given by Robin Snyder (EPA); a presentation on the SmartWay Transport Partnership given by Mitch Greenberg (EPA); and a presentation on the National Clean Diesel Campaign (NCDC) given by Jim Blubaugh
- A technology & fuel economy panel, including a presentation on Fuel Economy Labeling given by Robin Moran (EPA); a presentation on NHTSA's Approach to CAFÉ given by Julie Abraham (NHTSA); and a Report from the Union of Concerned Scientists (UCS) given by David Friedman (UCS)
- Workgroup Reports, including a presentation from the Modeling Work Group given by Gene Tierney (EPA); and a presentation from the Retrofit Work Group given by Terry Goff (Caterpillar), Charles Gauthier (NSTA), Michael Block (Emisstar), and Allen Schaeffer (Diesel Technology Forum)

Presentations are included in Appendix A of this summary.

Opening Remarks

Margo Oge commented on current EPA activities, the new Energy and Transportation Bills, and EPA priorities for the near future.

Current EPA Activities

EPA is responding to the Hurricane Katrina aftermath. There are requests to waive fuel requirements in the Gulf Coast States and other areas where fuel supplies have been affected by the hurricane. EPA has authority to waive these requirements when the Agency determines that supplies are extremely dire.

To date, EPA has honored requests from Louisiana, Mississippi, and Florida. In these states, ultra-low sulfur diesel (ULSD) and gasoline volatility requirements have been waived for on-road vehicles. Off-road diesel fuel with sulfur levels up to 5,000 ppm may be used on-road until October 5, 2005 – a 20-day extension from the initial date of September 15, 2005. Atlanta, GA has also been granted a waiver until October 5, 2005. EPA has authorized a reformulated gas waiver for Richmond, Virginia until September 23, 2005. On August 31, 2005, EPA granted a nationwide fuel waiver that allows refiners, importers, distributors, carriers and retail outlets to supply gasoline and diesel fuels that do not meet standards for emissions.¹

More waivers have been requested by State and local governments that have not yet been addressed. It has also not been decided whether implementation of the non-road fuel program could be delayed.

Energy and Transportation Bills

In general:

- EPA is required to conduct multiple analyses with regard to the renewable fuel standard (RFS).
- Banking and trading programs for ethanol are being discussed, particularly how to implement such programs cost-effectively.
- Waivers for States
- EPA needs to provide funding for demonstration projects

Energy Bill Authorizations:

- National Clean Diesel Campaign (NCDC)
 - Clean School Bus USA gets \$55 million a year for 2 years
 - Diesel Emission Reduction Act (DERA) gets \$120 million over a 5 year period. This will help address the legacy fleet of < 11 million existing diesel engines.
 - Diesel Truck Retrofit/Modernization gets \$100 million over a 3 year period
 - SmartWay Idle Reduction program gets \$140 million over a 3 year period
- Tax credits for alternative fuel vehicles have been authorized. A consistent methodology is needed.
- Funds have been authorized by EPAct, but the programs cannot move forward unless Congress appropriates the resources.

Transportation Bill Authorizations:

- Change conformity from 20 years to 10 years

¹ For more information, please visit <http://www.epa.gov/katrina/activities.html#sep13>

- For the first time, \$15 million a year has been allocated to Air Quality programs. This will allow prioritization for clean air programs. There will be changes to CMAQ as a result of this.
- There is a requirement for a rule to define HOV and fuel economy requirements to qualify cars to ride in HOV lanes. A consistent methodology is needed.

EPA Priorities

- Address issues from refiners and distributors of ULSD. There has been a 45-day delay for ULSD requirements. Instead of 9/1/06, it has been moved to 10/15/06.
- Evaluate tolerance of testing equipment for sulfur levels. The current 2 ppm variance may not be appropriate for measuring sulfur in ULSD.
- Begin the process for a small engine (<50 horsepower) standard. Currently, a safety study is being conducted with the Consumer Safety Commission. The study is expected to be completed in 6 months, at which time the process can move forward. EPA will be sending documentation to OMB in two months with a proposal schedule. They have also started the Small Business Regulatory Flexibility Act (SBRFA) process.
- Propose the locomotive & marine rule by the summer of 2006.
- A Climate Division has been established in OTAQ. Sarah Froman at EPA is the primary contact.
- Continue work on the Mobile Sources Air Toxics Program.

Discussion

Hugh Dickey (Chevron) commented that the fuel industry has taken advantage of the waivers, especially with respect to the Atlanta, GA fuel supply. They have been able to use barges coming into Florida with a higher vapor pressure fuel to ease gasoline supply problems in the Atlanta area.

National Commission on Energy Policy

Mr. Kodjak presented information on the National Commission on Energy Policy (NCEP). The Commission is made up of 16 members, and was formed with the deliberate and confined purpose of making recommendations on an energy policy. Key recommendations focused on climate change, oil security, and oil supply. Transportation and greenhouse gas (GHG) issues fell outside the mainstream recommendations of the NCEP, but have arisen as part of the commission's discussions.

Concerning climate change, the NCEP recommended an economy wide cap and trade program to slow, stop, and reverse growth in US GHG emissions from 2010 to 2020. The transportation sector, which is expected to grow by 49% and contribute the most CO₂ emissions in 2025, has the highest cost of reducing CO₂ emissions. The NCEP recommends capping the cost at a certain level, and buying emission credits from the government if costs continue to rise.

The NCEP addressed the concern that any greenhouse gas reductions the U.S. achieves will be negated if the U.S. is the only nation implementing reduction programs. Mr. Kodjak

stated that the U.S. will take a first step toward greenhouse gas reductions in 2010, but will reevaluate its efforts in 2015 compared to international efforts. Planned reductions of 5% per year will be frozen in 2015 if efforts are not met on an international scale.

Concerning oil security and supply, the NCEP recommended significantly strengthening and reforming the CAFE standards with a safety valve and credit trading between companies. The safety valve involves setting a cost cap on efficiency gains. If costs for increased miles per gallon exceed the cap, the new standard will be tempered. Mr. Walsh asked who determined the cost. Mr. Kodjak replied that regulators established a market and cost curve.

Mr. Walsh commented that a business council report on sustainable development forecast faster growth in the transportation sector. Mr. Kodjak reported growth of 49%. Mr. Kodjak replied that his growth number was modeled in MINICAM, which is a macro-scale model.

Nancy Seidman (Massachusetts) asked if the cost curve would be adjusted upward for the recent increase in gas prices. Mr. Kodjak replied that gas prices will impact the curve, but empirical evidence that correlates miles per gallon with vehicle miles traveled (VMT) is not very strong.

Mr. Walsh asked how increasing fuel efficiency in vehicles would affect cost-effectiveness particularly if gas prices rose to \$3.00 per gallon. Mr. Kodjak replied that cost-effectiveness would change significantly. Most Environmental Impact Assessments (EIA's) operate under the assumption that gas will cost \$1.50 per gallon.

A participant asked if greenhouse gas reductions in transportation are the "low-hanging fruit" (i.e., the cheapest and easiest sector to achieve reductions), or would reductions be so expensive they are not worth pursuing? Mr. Kodjak replied that once the policy is implemented, analysts will be better able to determine the success of achieving reductions.

There was some discussion regarding utilities. Mr. Kodjak commented that because the carbon content in petroleum is much less than coal, the utility sector will see a much larger decrease in reductions before any reductions are seen in the transportation sector. In addition, consumers would rather pay \$10-20 more on their electric bill and not get a payback than pay more for a car and see a payback in 10 years or more. However, utilities are demanding that the transportation sector do its fair share to reduce greenhouse gases, but there are questions about how to approach this sector. Is CAFÉ the correct approach, or would an emission standard similar to Europe and Canada be more appropriate? What about a cap-and-trade program for just the transportation sector (i.e., no cross-sector trading)? The NCEP will be holding workshops for these kinds of issues.

Kelly Brown (Ford) commented that it might make more sense to do cross-sector trading if it's cheaper for one sector to reduce greenhouse gases and another sector could buy credits. Mr. Kodjak replied that economic modelers generally support that approach, but models assume a perfect world and no efficiency gains. Efficiency gains could be the low hanging fruit.

Mr. Walsh raised two issues. First, how to quantify the cost to the consumer of new technology (when consumer pay back is not considered) and second, how to quantify the hidden costs of imported oil should be considered.

Mr. Dickey asked what types of control measures are being considered in the projected growth curves for utilities.

Mr. Brown questioned whether the cost-effectiveness numbers approximate true costs. He commented that a cap on emissions from the transportation sector would have everyone scrutinizing which control strategy would be the cheapest and easiest to implement down to the penny.

Fuels Panel

The Renewable Fuel Standard (RFS) in the Energy Policy Act of 2005

David Korotney gave the presentation and discussed rulemaking actions that must be taken as part of the RFS. These actions include setting the annual RFS as a percentage of total gasoline production and a developing credit program. He also discussed how renewable fuel might be counted, exemptions for small refineries until 2011, the cellulosic ethanol mandate that will begin in 2013, and the many analyses that are required. EPA is required to build a model in the next 4 years, which is a short amount of time. Mr. Korotney commented that although the RFS mandates removing the oxygen standard in reformulated gasoline (RFG), the 2001 Mobile Source Air Toxics Rule may result in continued use of oxygenates in RFG.

Ms. Seidman asked how much ethanol was produced in 2004. Mr. Korotney answered 3.5 billion gallons in corn ethanol, which does not include cellulosic ethanol or biodiesel.

Mr. Kortoney brought up several points regarding the credit program. There are questions of who will generate the credits and how renewable fuel will be counted. Tracking cellulosic ethanol will include new recordkeeping and reporting requirements.

Vickie Patton (Environmental Defense) asked what specific issues EPA would need to address regarding policy decisions and other issues concerning the RFS. Mr. Korotney replied that the timeline laid out by the Energy Bill to implement the RFS will not work well, specifically with the 1-year timeline for EPA to promulgate a renewable fuels rule. He is unsure what the renewable fuels program will look like, and some details like the definition of "renewability" have not been worked out.

Ms. Oge added that EPA will not be able to meet the deadlines set in the Energy Bill. EPA will do what it can, including developing an interim program for renewable fuels that could be started in 2006. EPA is looking to DOE for support. She commented that the RFS could not even be implemented until Congress appropriated funds.

Mr. Dickey commented that from a refiner's perspective, it will be important to understand their compliance obligations to meet the RFS by the end of this year (2005). He

hopes a banking, trading, and credit program will be in place for refiners to take advantage of by 2006. Refiners could then buy credits as they work to meet the RFS.

Mr. Brown asked if EPA would ensure that blended ethanol meets ASTM requirements for evaporative emissions and otherwise. Mr. Korotney replied that as ethanol volumes increase, there is a greater potential for splash blending, but the fuel must still meet State requirements. He does not perceive a change in the way finished gasoline will be tested. An enforcement mechanism is already in place for testing finished gasoline.

Mr. Walsh asked about the feasibility of implementing the RFS financially. Ms. Oge replied that the 2006 EPA budget has already been set by the appropriations committee. Unless Congress appropriates additional resources, programs set forth in the Energy Bill will not be feasible. However, EPA must still act on the RFS regardless of resources because it affects fuel supply.

Ms. Seidman commented that she assumes EPA will be working with stakeholders on banking and trading programs and in developing the RFS rulemaking. Ms. Oge said Sarah Dunham (EPA), who worked on the banking and trading program for the CAIR rule will lead OTAQs efforts on developing the banking and trading program. EPA hopes to bring some of these issues to the MSTRS. There will also be discussions with the oil industry, State and local governments, public health and environmental groups, and the ethanol industry.

Well-to-Wheels Analysis of Vehicle/Fuel Systems with the GREET Model

Michael Wang (Argonne National Laboratories) described the complete energy-to-emissions comparisons that the model performs to help analyze impacts as vehicles move toward alternative fuels. GREET models greenhouse gases, energy, and criteria pollutants, although there are no data yet to support estimates of black carbon and other constituents of PM_{2.5}.

The GREET model is increasing in popularity, and efforts are being made to integrate GREET and EPA's new MOVES model. Criteria pollutant emissions calculations have recently been updated as well. GREET includes transportation fuels from various energy feedstocks, including petroleum, natural gas, nuclear energy, corn, soybeans, and cellulosic biomass. In a graph comparing alternative fuels Mr. Wang indicated that hydrogen electrolysis fuel cell vehicles may actually cause an increase in emissions.

Potential for Increased Use of Biodiesel

Bob McCormick (NREL) defined biodiesel as a fatty acid methyl ester – a transesterification process from vegetables. Biodiesel uses 0.31 MJ of fossil energy input to produce 1 MJ of fuel product energy (the fossil energy ratio is 3.2). He provided information on the production capacity of biodiesel, different blends of biodiesel with petroleum diesel, and the possibility of production expansion. Most biodiesel is B20, a 20 percent blend with petrodiesel, but there are lower levels available. Illinois has a tax credit for B11, for example. A very small percentage of biodiesel is B100. He quoted an average price \$2.25 a gallon for B20, but that quote includes the recent fuel price increase. Biodiesel production is currently at its limit. If a

crisis arose in the next year, biodiesel would not be able to fill the total fuel need. The biodiesel blender's tax credit has been extended in the Energy Bill to 2008. The credit was created as part of the American Jobs Creation Act in 2004.

One concern with biodiesel is a potential increase in NO_x emissions. There are currently insufficient data, and insufficiently represented data, to draw any conclusions regarding the average effect of biodiesel on NO_x emissions, even directionally. He cited one study that saw a decrease in NO_x emissions with biodiesel use. He added that generally speaking, vehicle tests show a decrease in NO_x emissions while engine dynamometer tests show an increase.

Eric Skelton (Spokane County) commented that his area has implemented a Clean School Bus USA biodiesel program for 2 years, and has noticed minimal maintenance requirements related to biodiesel use. However, one problem has arisen with fuel hoses and lift pumps deteriorating prematurely. Mr. McCormick replied that he has seen that happen in early 1990's buses. He added that the problem could be with fuel system components.

John Johnson (Michigan Technological University) asked what vehicle manufacturers will allow concerning biodiesel use with regard to warranties. Mr. McCormick replied that some manufacturers allow a 5 percent blend, and some allow up to 20 percent as long as ASTM D-6751 specifications are met. Mr. Johnson also asked about the effect of biodiesel on hydrocarbon emissions from engines with exhaust gas recirculation (EGR) valves. Mr. McCormick replied that engines with EGR valves tested on an engine dynamometer did not show any unusual results.

Terry Goff (Caterpillar) asked about the effect of biodiesel on aftertreatment catalysts, specifically whether ash buildup was a problem. Mr. McCormick replied that this was an important issue, and a project has been initiated co-funded by the biodiesel industry and DOE. The project will study biodiesel impacts on durability and performance of emission control technology.

Mr. Skelton commented that Washington State is using B20 in school buses with diesel particulate filters (DPF), and will begin a 6-month evaluation on those effects starting January 2006. Mr. McCormick commented that he would not expect any issues with B20 and DPF, since B20 only contains 1-2 parts per million (ppm) sulfur, and that is mostly from petrodiesel contamination. ASTM specifications were modified to lower metal levels in B20 that could build up in DPF as well.

Merrylin Zaw-Mon (EPA) asked about the effects of biodiesel on non-road engines. She indicated that biodiesel is widely used in the farming community. Mr. McCormick replied that there is no quantitative information on biodiesel use in non-road engines. Farmers often use B2, which is virtually identical to petrodiesel.

Michelle Robinson (Union of Concerned Scientists) mentioned explosive growth in biodiesel sales, and asked where the fuel is mainly used. Mr. McCormick indicated that a recent campaign featuring Willie Nelson has probably contributed to the increase in sales, particularly to long-haul truckers, urban buses, and school bus fleets.

Ms. Robinson asked if DOE or FDA discussed the possibility of genetically engineering crops for long-term expansion of biodiesel production? Mr. McCormick replied that those discussions have not happened, and DOE is not really involved with feedstock discussions.

Voluntary Programs

Best Workplaces for Commuters

Robin Snyder (EPA) described the program which recognizes employers regionally and nationally that meet or exceed a *National Standard of Excellence* in commuter benefits. Ms. Snyder gave statistics supporting the success of the program in its outreach to both commuters and employers. She encouraged meeting attendees to submit ideas for future program growth.

SmartWay Transport Partnership

Mitch Greenberg (EPA) provided information on the partnership which promotes retrofit and other emission reduction strategies for the freight sector, specifically targeting heavy-duty diesel trucks. SmartWay is designed to create a market demand throughout the freight industry for cleaner more efficient freight transportation. He outlined the goals of the program, successes to date, and a new advertising campaign that is gaining national attention. Studies are currently underway to determine ways to improve fuel efficiency while reducing emissions. The presentation concluded with costs of retrofits and different ways of providing funding to truckers. Mr. Greenberg commented that the program needs to gain market traction, and get financial and environmental corporate America looking at SmartWay.

National Clean Diesel Campaign

Jim Blubaugh (EPA) provided an update on both the regulatory and voluntary aspects of the National Clean Diesel Campaign (NCDC). The program goal is to reduce emissions in the existing diesel fleet of 11 million engines by 2014. Sector-based strategies and regional initiatives have been established, and technology verification programs have been ramped up. Funding for retrofit programs has also increased.

Mr. Blubaugh indicated that some in-use testing of PM filters showed that the technology had not deteriorated after 3,000,000 miles of in-use performance. When asked if in-use testing data had been published, he replied that EPA will be conducting their own tests and publishing data along with lessons learned this year. Manufacturers also have test data as part of the verification process. EPA has found some problems with mis-fueling and low exhaust temperatures.

Technology and Fuel Economy

Fuel Economy Labeling

Robin Moran (EPA) gave this presentation. The Energy Bill directs EPA to update their fuel economy labeling provisions. Ms. Moran explained that fuel economy testing had not been updated since 1984, and current labeling is not likely capturing “real-world” driving cycles, especially in light of new emission control technology and vehicle design. Rulemaking for new labeling provisions will be final in 2006, and will impact model year 2008 vehicles.

CAFÉ Overview

Julie Abraham (NHTSA) gave a presentation on the development of the new CAFÉ fuel economy standards for light duty trucks. She gave a brief overview of the CAFÉ history and process, and outlined the proposed new standards that will replace uniform standards with a size-based CAFÉ system. Light trucks will be divided into six categories based on their footprint (wheelbase X track width). The proposal allows manufacturers to comply with either the reformed or the current café standards for model years 2008-2011. Mr. Skelton asked if incentives were in place to encourage manufacturers to comply with the reformed CAFÉ in 2008 instead of waiting until 2011. Ms. Abraham said that no incentives were in place. She asked for comments on the reformed CAFÉ regarding the 2011 time period.

Herb Fox asked what the weighted average of CAFÉ standards by vehicle class would be for the entire fleet. Ms. Abraham replied that while they were trying to move away from an average, an economic analysis reported an average 24 miles per gallon across the fleet. Mr. Fox commented that 24 mpg was not significantly different than the current standard.

Mr. Johnson asked if some light trucks would be re-classified into passenger cars. Ms. Abraham replied that it was possible; for example, the PT Cruiser is classified as a light-duty truck.

Oil Dependence, Climate Change, and Future Powertrains: A Comprehensive Approach

David Freidman (UCS) discussed the problems surrounding oil dependence, climate change and new vehicle technology that is available to help solve these problems, including hybrid vehicles, fuel cell vehicles, and conventional vehicles.

Brock Nicholson (NC DENR) asked about the similarity of spark ignition engines that run on gaseous hydrocarbons to natural gas vehicles. Mr. Nicholson also asked if biodiesel or ethanol as alternative technologies could be put in the category of conventional technology. Mr. Freidman answered that those alternative fuels would be more appropriate in a transitional technology category like corn ethanol. He commented that hydrogen vehicles face infrastructure and range challenges. Mr. Nicholson indicated that there may be opportunities to push the hydrogen infrastructure, especially at airports in the short term.

Ichiro Sakai (Honda) agreed on the need to act in order to reduce emissions and oil dependence, but there are problems with attracting customers. He added that he personally appreciates the NHTSA CAFÉ proposal, as it allows for a healthier competition allowing technology to win. Mr. Friedman responded that the marketplace has not been designed to allow consumers to choose fuel efficiency and only illustrates what they won't give up (e.g., size). There are many efficient vehicle models with good gas mileage that consumers do not buy based on need restrictions. Families with more than 4 members, for example, would probably need something larger than a Honda Civic. The market creates incentives based on trends, and has not been designed to choose fuel efficiency. Markets will keep pushing large, powerful vehicles or money will be lost.

Mr. Fox commented that he supports the strategies dealing with conventional technology, and asked how a paradigm shift could occur from current perceptions of power and size to fuel efficiency. Mr. Friedman replied that it was a question of leadership. On the consumer side, there is a need to present choices. It is not as simple as the CAFÉ standards.

Modeling Work Group Report

Gene Tierney (EPA), Work Group co-chair, gave an update from the Modeling Work Group which met the day before. He summarized the two presentations entitled "Summary of MOVES2004 Comments" and "MOVES2006: Plans and Status" from the previous day's meeting. MOVES2004 received many conflicting comments in the areas of input and output, vehicle categories, road types, vehicle types, local data, I/M, SIP/Conformity implications, and technical issues. MOVES2006 builds on the 2004 version by adding pollutants, controls, emission processes, enhances inputs and outputs, and models on a regional and micro-scale.

Retrofit and Clean Diesel Work Group Report

The Retrofit and Clean Diesel Work Group was formed in 2003 to address emissions from the existing fleet of 11 million diesel engines in 4 different sectors. Gay MacGregor (EPA) and Tim Johnson (Corning) are co-chairs of the Retrofit Work Group. Charlie Gauthier (National Association of State Director of Pupil Transportation Services) and Jennifer Keller (EPA) co-chair the School Bus sector. Michael Block (Emisstar) and Trish Koman (EPA) co-chair the Ports sector. Steve Albrink (EPA) and Leah Wood (AGC) co-chair the Construction sector. Allen Schaeffer (Diesel Technology Forum) and Mitch Greenberg (EPA) co-chair the Freight sector. The non-EPA co-chairs of each sector gave presentations on each sector's recommendations. The workgroup will be submitting their final report and recommendations through the MSTRS to the full CAAAC, hopefully at their November meeting. Mr. Goff presented the entire Work Group's recommendations as well as the Construction sector recommendations.

Mr. Goff outlined the background of the Work Group and presented cross-sector recommendations and consensus on general findings from the Work Group report. Cross-sector recommendations focused heavily on resources needed to continue existing programs and start new ones. Program recognition and education/outreach were also emphasized.

Mr. Gauthier presented recommendations on the Clean School Bus USA sector, including giving priority to replacing school buses older than model year 1977, giving equal access to all school districts for retrofit programs, and striving for geographic diversity.

Mr. Schaeffer presented recommendations from the Freight sector. He described current diesel reduction incentive programs and discussed considerations for incentive design. Recommendations include the importance of public funding, promotion of favorable financial and tax terms, resolution of technical issues unique to the freight sector, communications outreach, and promotion and marketing.

Mr. Block presented recommendations from the Ports sector. He summarized different operations and ownership types in ports, and outlined considerations for incentive design including the high cost of implementing retrofit programs in ports, and the lack of verified technology. He highlighted that any retrofit program should focus on the “3 F’s”: Feasible, Functional, and Flexible. Recommendations include assembling a suite of solutions to accommodate the diversity in the industry. Grants are preferred by public port authorities, while tax incentives and loans/rebates are preferred by private entities such as terminal operators. There is also a need to develop emission inventories for ports, and for EPA to work with stakeholders to develop guidance for inventory development. Regulatory credits that could be banked for future expansion in ports are also desired.

Mr. Goff presented recommendations from the Construction sector. He presented consensus items among sector group members, including the need for more verified technologies, and the resource gap between retrofit needs and available funding. However, there is not consensus among group members that regulatory requirements are needed for construction, or that bid preferences for companies with clean equipment, or requiring companies to retrofit their equipment, is acceptable. Recommendations include combining incentives such as public funding with contracting provisions, developing innovative ways to leverage the combination of private financing with available government funds, developing a national program of low interest loans to support retrofits for the private sector, and encouraging a program of bridge financing to facilitate accelerated replacement of public sector equipment. They also support more outreach and education, enhancing the verification process, and developing model programs and incentive language.

Mr. Goff concluded the presentation by outlining the remaining timeline for the Retrofit and Clean Diesel Work Group. He commented that there may be a need to continue the group beyond its planned dissolution date in the Spring of 2006. There is a need for the Subcommittee members to vote on these recommendations prior to the presentation at the CAAAC meeting. Members should expect a flurry of emails in the next few weeks.

Ms. Oge gave her thanks to the Work Group members for all the hard work they have done over the past 2 years. The Work Group was able to work together effectively and agree on the importance of the issues at hand across stakeholder groups. She asked for a prioritization to be given to recommendations in the report. She also asked members to articulate how they can keep working with EPA, and what could be done collectively in the next year in the realm of

outreach and education. Stakeholders could take the lead on a variety of issues, including communication and organization.

Mr. Skelton commented on the importance of speeding up the verification process. Currently, for example, there is only one crank case ventilation device (CCV) verified, and it is prohibitively expensive. Competition is needed to drive the price down so more school buses can be retrofitted. There is at least one other CCV manufacturer, but they are receiving conflicting information on the process.

Ms. Patton thanked all the Work Group members for their tremendous effort to reach consensus. She encouraged members to continue to lobby for additional funding.

Wrap-Up

The next meeting of the MSTRS is tentatively scheduled for March 15, 2006.

Ms. Rudzinski and Mr. Walsh concluded the meeting at approximately 5:00 p.m.

Appendix A

**Presentations from the MSTRS Meeting on September 13,
2005**