

Clean Air Act Advisory Committee Meeting

May 29, 2008

Doubletree Hotel – Crystal City

300 Army Navy Drive

Arlington, Virginia

Member Introductions and Opening Remarks – Principal Deputy Assistant Administrator
Robert J. Meyers

Rob Brenner, US EPA, welcomed everyone to the Clean Air Act Advisory Committee (CAAAC) meeting, and introduced Bob Meyers, Principal Deputy Assistant Administrator to US EPA.

Mr. Meyers thanked everyone who attended the Clean Air Excellence Awards ceremony the previous night. He thanked Pat Childers, US EPA, for organizing the event, and he thanked the event sponsors and awards presenters.

Mr. Meyers presented the OAR's priorities and outlook. The National Ambient Air Quality Standards (NAAQS) is a priority for the OAR. The final rule for lead is scheduled for September 15th, not September 1st, as listed on slide 2 of Mr. Meyers' presentation. NO₂ and SO₂ were combined in a rulemaking, which will be proposed in 2009 and finalized in 2010. With regard to NAAQS implementation, PM 2.5 is ongoing, and EPA will address daily PM designations this fall. EPA is developing a rule to address the Court decision that overturned the previous implementation rule for ozone.

The Clean Air Interstate Rule (CAIR) implementation is still ongoing. There has been litigation addressing this program, and EPA is waiting for a Court decision. In the meantime, EPA is fully implementing the CAIR program. Last week EPA was denied a rehearing in the Clean Air Mercury Rule (CAMR); EPA will respond to this decision.

The Clean Air Visibility Rule (CAVR) State Implementation Plans (SIPs) were due on December 17, 2007, and EPA is examining the SIPs in detail.

The Locomotive and Marine Diesel rule was signed on March 14, 2008. This rule completes the suite of major diesel programs. Congress allocated \$49.2 million for the Diesel Emissions Reduction Act (DERA) Grants. The new emissions standards for small engines are close to being complete.

The 2005 Energy Act required EPA to have a renewable fuels standard of 7.5 billion gallons. Less than 18 months later Congress increased the level to 36 million gallons by 2022. This increase restructured the program within the Clean Air Act (CAA), and EPA is writing definitions for the new program. They expect to submit a proposal this fall and a final rule next year.

The OAR is responsible for writing the radiation standards for Yucca Mountain, and the OAR also has several upcoming deadlines for National Emission Standard for Hazardous Air Pollutants (NESHAPs).

Addressing climate change has been an ongoing and increasing effort within the OAR. EPA and the Department of Energy (DOE) have developed many laws/policies related to climate change.

Mr. Meyers presented a slide (slide 10) that summarized the Massachusetts v. EPA case. EPA denied a petition to regulate GHGs from mobile sources under the CAA and litigation ensued in court. A decision was made on April 2, 2007 that referenced Title II of the CAA (Motor Vehicles). Mr. Meyers then presented a slide (slide 11) summarizing the Massachusetts v. EPA case today. There is an ongoing effort to develop a GHG Advanced Notice of Proposed Rulemaking (ANPR). There is still an ongoing effort to address 20 in 10 regulations/Executive Order and 202(a) motor vehicles and 211(c) and (o) fuels.

EPA has also received CAA mobile source petitions covering marine, aircraft, and nonroad. They are all slightly different, but mainly follow the original petition that EPA received for motor vehicles on CAA 202(a).

The Mandamus Petition was filed on April 2, 2008. The Mandamus action requests that the Agency move forward on the endangerment finding under the CAA. Statutory language is similar throughout the CAA so a finding under one section could have a ripple effect.

With regard to Title 1 (Stationary Sources), GHGs have been an issue in ongoing New Source Performance Standards (NSPS) rulemakings. EPA addressed this recently with regard to petroleum refineries. EPA also has the authority for potential regulation under 108 (NAAQS), 111 (NSPS), and 112 (Hazardous Air Pollutants (HAPS)). There is also debate about Prevention of Significant Deterioration (PSD)/New Source Review (NSR) standards.

Other issues pertaining to Massachusetts v. EPA include: the Hill examining climate change legislation for which EPA has provided technical assistance; international discussions, including the full G8 which is scheduled for July; and enterprise sustainability discussions.

Last year's appropriations bill required EPA to propose and finalize a mandatory reporting rule for stationary sources. The bill requires EPA to use its authority under the CAA to require GHG reporting from upstream and downstream sources.

In conclusion, it is a busy time for the OAR. In addition to the OAR's traditional focus on air pollutants, NAAQS, air toxics, and mobile sources, the OAR was presented with a major Supreme Court decision which has resulted in additional work.

Tim Johnson, Corning Inc., asked Mr. Meyers how EPA's jurisdiction on GHGs lines up with global warming issues in conjunction with DOE, the Department of Transportation (DOT), and other agencies and organizations. Mr. Meyers responded that EPA's context for jurisdiction is the CAA and the decision of Massachusetts v. EPA which indicated that the air pollutant encompasses GHG emissions. However, EPA does work very closely with DOT.

Gary Jones, Printing Industries of America Graphic Arts Technical Foundation, asked a three part question focusing on mandatory GHG reporting. (1) When will the proposal be available? (2) In the issuance of this reporting requirement, will EPA provide guidance on calculations? (3) How does this requirement mesh with the climate registry program that was launched by states and how does this integrate with other state efforts on mandatory GHG reporting?

Mr. Meyers responded that EPA was directed to submit a proposal in nine months. In terms of guidance for reporting, EPA will describe existing systems that are adoptable to this rule. EPA will discuss integrating existing state reporting systems in the proposal.

Eugene Trisko, Attorney at Law, offered an observation on the CAIR litigation issue. Looking ahead to possible outcomes, Mr. Trisko stated that it is his understanding that the majority of the benefits of emission trading occur initially within the system, then within the state level, then at a regional level, and finally at a national level. There may be variations of those trading regimes that could address virtually any possible objection that Mr. Trisko can conceive that a Court might pose. By fashioning an alternative to CAIR that relies more heavily upon these definitions, one might be able to preserve the essential cost effectiveness of the rule as well as preserving its relationship to the CAIR/Best Available Retrofit Technology (BART) determination (i.e., CAIR is better than BART). Mr. Meyers stated that Mr. Trisko's ideas are interesting, but he is hopeful that the Court will sustain the program, though he cannot speculate on the Court's decision.

Janet McCabe, Improving Kids Environment (IKE), asked Mr. Meyers to discuss what the Agency is thinking in terms of CAMR (e.g., monitoring and the petition for certification). Mr. Meyers stated that EPA is looking into available options for monitoring as well as other possible options. With regard to certification, there is a petition for a rehearing. EPA thought that the Agency had the legal basis to reverse what they thought was an error. The issues in the near term are 112(j), which does not apply, and they are evaluating 112(g).

Mr. Johnson stated that EPA has not received any additional resources to address the climate change and GHG issue, which would imply that EPA is shifting its resources to address the new GHG priorities. Mr. Johnson asked Mr. Meyers how EPA will address this issue moving forward. Mr. Meyers responded that Congress provided \$3.5 million in appropriations for the Reporting Rule. This issue will need to be addressed in the long term; however, EPA will continue to shift resources in the short term.

Subcommittee/Work Group Report Outs

Robert Brenner, EPA, said that during the subcommittee meetings, the members had an important discussion about reaching out to the younger generation. One of the Clean Air Excellence Award winners, Pat Mitchell from Auntie Litter, has a lot of experience with that issue. She has won numerous awards and she is with the Committee to share what she has learned from reaching out to children. Through public service announcements, DVDs, and songs and plays about the air, Ms. Mitchell has educated many. Ms. Mitchell thanked the group for the opportunity to share her story. *Pat showed a video about the Auntie Litter Program.*

Mr. Brenner thanked Ms. Mitchell and said that he and Pat Childers, EPA, will be talking to the Office of Environmental Education about linking up with the Auntie Litter program.

Ursula Kramer, Pima County Department of Environmental Quality, thought that last night's ceremony was very nice and that the recipients were very deserving. Operating from a regulatory perspective, she usually has to deal with negative actions. It was very rewarding to go through and look at the good things that have been done and recognize them. Mr. Brenner said that he thinks the awards committee can get Congressional staff and members of Congress to come to the event. There will be a follow-up call with the awards committee to get all of the reactions on the event.

Permits, New Source Review, and Toxics

Bill Harnett, EPA, said that the Permits, New Source Review, and Toxics Subcommittee met the day before and heard about the status of the permitting rules that are out for proposal or soon to be. The group also had one issue that they wanted to bring back to the full Committee for discussion. The question is whether to add National Ambient Air Quality Standards (NAAQS) implementation to the Subcommittee mandate. In the short term, the Subcommittee will focus on existing State Implementation Plans (SIPs) and how to improve the process. Mr. Brenner added that there has been some discussion within EPA about an add-on to the Air Quality Management (AQM) Work Group, which would also be discussing these issues.

Elaine Mowinski Barron, Sierra Medical Center, said it would be helpful to know what kind of effect the CAAAC is having, especially in the arena of environmental health. Anna Garcia, Ozone Transport Commission, said that it is important that implementation rules and guidance documents are well-coordinated and delivered at the appropriate time. Mr. Harnett responded that the Subcommittee would not be setting the NAAQS levels, but rather thinking about issues such as designation guidance and modeling guidance. The group agreed to add NAAQS implementation to the charge of the Permits, NSR, and Toxics Subcommittee.

Economic Incentives and Regulatory Innovations

In the previous day's Economic Incentives and Regulatory Incentives Subcommittee meeting there was a discussion lead by Carey Fitzmaurice, EPA, about creating educational tools (e.g., blogs). In addition, the Agency reported back to the Subcommittee on the Advanced Coal Technology (ACT) work group outcomes. There will be a new Congress and Administration this fall and Mr. Henneke asked for volunteers to meet to discuss two important issues that need to be addressed prior to the first of the year:

1. Identifying the benefits of pollution reduction strategies on a multi-pollutant basis.
2. Identifying early actions and systematic approaches that can be taken to address air pollution from legacy sources.

Ms. Mowinski Barron added that the group should take into account the residual risks involved. Valerie Ughetta, Alliance of Automobile Manufacturers, agreed that the dis-benefits and other non-synergistic effects should be considered. Mr. Brenner added that the group should focus on ways to get cleaner air at a lower cost.

Mobile Source Subcommittee

John Guy, EPA, said that the Mobile Source Subcommittee met on May 8th and several CAAAC members attended the meeting. There was a full schedule of presentations and discussions. Part of the meeting was Work Group report-outs, including the MOVES model review and inspection and maintenance technologies. In addition, the group had a briefing on diesel retrofits, mid-level ethanol blends, nitrogen oxide (NOx) impacts, greenhouse gas (GHG) lifecycle analysis, the EPA Kansas City Gas Particulate Matter Study, and the National Renewable Energy Laboratory (NREL) boiler emissions study.

Dennis McLerran, Puget Sound Clean Air Agency, asked about whether any effort is being made to make sure that Congress votes on HR 802 so that the U.S. can vote at the International Maritime Organization (IMO) in October. Secondly, he asked if anything is being done to reduce vehicle miles traveled (VMT). Margo Oge, EPA, said that there have been many calls and visits to the Hill on the issue of the IMO and that any other thoughts or efforts on the issue would be appreciated.

Don Clay, Koch Industries Inc., added that the electric sector is looking at the plug-in hybrid and asked whether the Agency had considered this technology. Ms. Oge said that EPA did a paper on plug-in hybrids and that it will continue to consider this technology. Mr. Brenner agreed with Ms. Oge.

EISA Renewable Fuels Provisions & Transportation Fuels GHG Lifecycle Analysis

Sarah Dunham, Director of Transportation and Climate Division, U.S. EPA, made a presentation to the group on EISA Renewable Fuels Provisions and Transportation Fuels Greenhouse Gas (GHG) Lifecycle Analysis.

Ms. Dunham began with an overview of the policies governing the subject. She provided an update on the Energy Policy Act of 2005. The Renewable Fuel Standard (RFS) rule was finalized in May 2007. The Energy Independence and Security Act was passed by Congress and signed by the President in December 2007. The legislation modifies the current RFS program (e.g. provides new waivers and paper credit provisions and includes new obligated parties). The new legislation has new obligations and definitions. The standard is extended to diesel fuel in addition to gasoline and non-road fuel in addition to highway. The obligated parties now include refiners, importers, and blenders of these fuels (gasoline and diesel). The new legislation also eliminates some old categories, including waste-derived ethanol and 90 percent cellulosic ethanol. The definitions also now include new elements, including two key provisions: lifecycle GHG reduction thresholds and existing cropland criterion.

Ms. Dunham next provided information on EPA's Lifecycle Analysis Methodologies. She provided some background on lifecycle analysis. Lifecycle analysis is also called fuel cycle or well-to-wheel analysis, including a compilation of the GHG impacts of a fuel throughout its lifecycle. Some impacts to consider include production/extraction of feedstock, feedstock transportation, fuel production, fuel distribution and tailpipe emissions. Lifecycle analysis can be used to compare one or more fuels performing the same function.

EISA requires lifecycle assessment. Each fuel category required to meet mandated GHG performance thresholds, including conventional biofuel, advanced biofuel, biomass-based diesel, and cellulosic biofuel. The EISA language permits EPA to adjust the lifecycle GHG thresholds by as much as 10 percent. The baseline fuel for comparison is gasoline and diesel fuel in 2005.

Ms. Dunham showed an overview of slides to provide examples of the types of results EPA has received from the models and how the results are integrated into the lifecycle analysis for various fuels. She also provided a description of further work on life cycle modeling. EPA continues to have discussions with industry groups, academics and other experts, and EU regulators.

Ms. Dunham next took questions from the committee.

Jack Goldman, Hearth, Patio & Barbecue Association, asked what sort of applicability this methodology might have to other sorts of fuel exchange programs. Ms. Dunham responded that EPA is actively talking about this methodology both inside and outside the agency. Other departments in the agency are flagging other sectors and regulatory efforts that this methodology might work for.

Dennis McLerran, Puget Sound Clean Air Agency, said that local fleets are making decisions about whether to continue using biofuels. He added that with pricing impacts, there is political pressure and that timing is important since large fleets are waiting to find out when this analysis will be put into rule. Ms. Dunham responded that the statutory requirement is set for January 2009, but that the timing is ambitious.

Bill Becker, National Association of Clean Air Agencies (NACAA), asked if anyone had heard from any other technologies about whether 20 percent is slowing down investments. Additionally, as part of final rule, does EPA expect to have discussions about other environmental impacts with these finds of ethanol? Ms. Dunham responded that she has not heard that the 20 percent is slowing down any investments.

Tony DeLucia, East Tennessee State University, asked if EPA had looked at the extension of this work for food security and food prices in the economic sense. Ms. Dunham responded that those are critical issues and that a lot of these modeling tools will help us get to some of those issues. She added that EPA is working closely with the U.S. Department of Agriculture (USDA) and the Department of Energy (DOE).

Margo Oge, EPA, added that EPA has received a petition from the Governor of Texas. She added that EPA must respond to petitions that recognize supply or severe economic impacts. EPA is seeking comments on how to deal with these waivers and requests.

Carolyn Green, Sunoco, asked if there is any plan to translate this information into pounds or grams/mile so we can do a comparison on basis of vehicle miles traveled (VMT). This is what the public understands – not British Thermal Units (BTU). Ms. Dunham responded that this methodology can be communicated in any number of ways and that EPA needs to decide the best ways to present it depending on the context.

Bob Wyman, Latham & Watkins LLP, stated that California has a low carbon fuel standard which will require use of life cycle analysis. The debate is on which set of criteria should be used to determine that. He asked what process EPA is using to determine a single set of criteria? Additionally, he asked to what extent is there consideration for how the demand side will respond to these rules. Ms. Dunham responded that EPA is having extensive conversations with California to share the methodology and analysis with CARB. Secondly, EPA knows that the Agency needs to consider a number of factors, and that demand has to be considered.

Michael Formica, National Pork Producers Council, asked to what extent the analysis will play a part in EPA's decision on livestock industry for severe environmental harm. Secondly, is EPA looking at domestic livestock production or international trade of livestock where methane is not being captured? Ms. Dunham responded that the models do have livestock and the international modeling is integrated. She added that she could share what EPA is doing with Mr. Formica and he could point out anything that may be missing.

Tim Johnson, Corning Inc., recommended that EPA consider carbon soot as a carbon gas. It is becoming a major contribution to global warming and is present in diesel emissions, stationary emissions, burning of the forests, etc. You may be ignoring 25-35 percent of greenhouse contributions. Ms. Dunham responded that EPA is aware of the concern and the issue is under consideration.

Transitioning Vehicle Inspection and Maintenance Programs – Gene Tierney, EPA

Gene Tierney, US EPA, explained that the Mobile Source Technical Review Subcommittee formed the Transitioning Inspection/Maintenance (I/M) Work Group in response to concerns related to the impact of changes to the light vehicle duty fleet in states that run I/M programs. The Work Group's goal was to develop information that states could use as they change their I/M programs. The Work Group was represented by states, the I/M industry, the auto industry, and consulting businesses.

The 1990 Amendments to the Clean Air Act (CAA) require basic I/M in moderate ozone non-attainment areas and enhanced I/M in serious and worse ozone non-attainment areas. Thirty-three states today conduct special maintenance programs. The states do tailpipe tests on pre-1996 vehicles and on-board diagnostic (OBD) checks only on 1996 and newer vehicles.

Since 1996, light vehicle motor vehicles have been required to have OBD systems (i.e., the check engine light). The check engine light illuminates when emissions from a vehicle exceed the certification standards by a factor of 1.5. Most states use this diagnostic system to pass/fail vehicles during inspections.

The Work Group produced a report with three major aspects: (1) review of data related to vehicle trends; (2) analysis of options for innovative approaches to I/M; and (3) assessment of costs, benefits and pitfalls.

Mr. Tierney showed data from EPA's emission factor model MOBILE6. The graph on the left of the slide shows that the majority of the fleet is OBD-equipped. The chart on the right shows vehicle miles (VM) traveled. The motivation to examine this information is to determine if tailpipe emission testing networks should be maintained when the majority of the fleet is OBD-equipped and an OBD test can be conducted in place of an emissions test.

The Work Group took the data analysis one step forward and looked at the emissions contribution of the two segments of the fleet. The pre-1996 vehicles still contribute the bulk of the VOC emissions to the inventory.

The Work Group broke the data down by the contribution of these two segments to I/M benefits (slide 9 of Mr. Tierney's presentation). In the 2010/2012 timeframe, the amount of initial emissions reduction from the pre-1996 fleet decreases faster than their contribution to the overall inventory. The bottom line shows that the pre-1996 vehicles are becoming an increasingly smaller portion of the fleet. Their VM contribution is dropping, but they are still high emitters and the Work Group needs to examine this as I/M programs change. Each state, however, needs to examine their fleet, as fleets will differ between states.

Given these trends, how do we design a cost-effective I/M program that continues to get significant reductions from the fleet? To answer this question the Work Group developed three alternative approaches to I/M: (1) using a kiosk; (2) using a data logger; and (3) using remote OBD. The Work Group examined the advantages and disadvantages of each method. A continuous remote OBD program today would result in a 10 percent reduction in VOCs versus 9 percent for an annual program and 8 percent for a biannual program.

The Work Group also performed an analysis of the costs associated with remote OBD and periodic I/M. The chart on slide 14 shows the cost of periodic I/M and remote OBD, and the savings on a national basis for doing remote OBD over periodic I/M. This adds up to an overall savings of \$16-22 billion in 10 years. However, not all states will transition to remote OBD, and therefore savings will probably not be this large.

An extensive review was performed on the report, and there were some major concerns. First, for remote OBD there is a feeling that big brother is watching you. Second, inspection systems vary from state to state, and remote OBD may not fit in well with a decentralized approach. Third, how should states approach pre-OBD vehicles?

In conclusion, these innovative approaches can reduce the cost of I/M, especially the inspection cost. Using remote OBD can improve the inspection benefits of the program and reduce the convenience costs. States need to carefully analyze and consider local data when making a transition to remote OBD.

Elaine Mowinski Barron, Sierra Medical Center, asked if the Work Group had worked with port authorities on this technology. Mr. Tierney responded that the Work Group did not address this type of international issue.

Ralph Marquez, ESP, said the issue that will divide people is the convenience vs. privacy issue. Is the program considering a flexible program where people can choose to install the device and the state will receive partial credit depending on the number that switch to the new system? Mr. Tierney responded that the Work Group anticipates that no state will make this mandatory right now. Mr. Marquez added that all the savings in inspections come from the pockets of the inspectors and they will likely put up a fight. Mr. Tierney agreed.

Pat Childers, US EPA, asked if anyone objected to giving EPA the report for review. No one objected.

EPA Initial Response – Advanced Coal Technology Work Group – Anna Marie Wood

Rob Brenner, EPA, and Ben Henneke, Clean Air Action Corporation, gave a background on the history, formation, and charge of the Advanced Coal Technology Work Group. The Work Group was recommended in September of 2006 with a charge to specifically identify the barriers and opportunities under the Clean Air Act (CAA) to expedite advanced coal technologies (ACT), including capture and storage of CO₂. The Work Group was given one year and charged with producing an interim report and final report.

The report has been used in various venues and the Agency has responded in some way to each charge. The specific actions are as follows:

- **Early Deployment Fund:** A bill will be introduced this week on the Hill based on the Work Groups' recommendation. Gene Trisko, Attorney at Law, gave an overview of his organization's work on the early deployment fund. They have worked with several members of Congress and other organizations to develop a bill for a fund that will operate for 15 years with a \$15 billion fee structure from distribution utilities. The goal is to have an independently financed mechanism now.
- **Incentives Toolkit:** EPA is preparing an Advanced Notice of Proposed Rulemaking (ANPR) in response to the Massachusetts v. EPA decision. Throughout that process, the Agency will be considering new ways to implement a Greenhouse Gas (GHG) program.
- **State Actions:** There have been conversations with public utility commissions (PUCs) on the issue of cost recovery for integrated resource planning efforts.
- **National Policies to Send a Market Signal and Create a Market Driver:** There has been specific action on various bills on this issue. EPA has provided support on initiatives presented to the Agency.
- **Technology Advancing Agreements:** EPA has a commitment to work with stakeholders on this issue and is ready to bring to bear whatever assistance is necessary to facilitate these agreements.
- **Take Advantage of Existing Opportunities under the CAA:** This will be addressed in the ANPR.

- **EPA Study on Existing Facilities:** The Office of Air and Radiation (OAR) has talked with the Office of Air Programs (OAP) about working with the National Academy of Sciences or another group on this issue.
- **Improve Energy Efficiency:** One idea is to seek hypothetical examples of utilities where the implications of these projects are evident.
- **Carbon Capture and Sequestration:** There have been communications with the Office of Water (OW) and a Underground Injection Control (UIC) rule will be proposed in the summer of 2008.
- **OAR and OW Establish Framework:** OAR has worked to partner on research and risk assessments, and the ongoing partnership has worked well. The two groups have jointly issued experimental well guidance pending further action by EPA.
- **Outreach:** Outreach to other agencies has included the UIC proposal, two stakeholder meetings, consultation with state and local groups, and a series of meetings. More formal education programs are being researched.
- **Accounting Protocol:** The Agency does not want to recreate the wheel on this issue. The GHG mandatory reporting rulemaking will require this kind of reporting. This rule will be proposed in September of 2008.
- **Establish Specifications for Pipeline CO₂:** The Agency talked with Interstate Natural Gas Association of America (INGAA) and other stakeholders on this issue.
- **Pipeline Infrastructure Study:** The Agency is looking into this integrated analysis with other organizations.

Bill Auberle, Northern Arizona University, noted that there are three large rulemakings (the ANPR on GHG, the UIC program, and the Mandatory GHG Reporting) in the works and asked for updates and clarification. Mr. Brenner said that the ANPR puts this work in context with other work in this area and that nothing is at odds with the recommendations of the work group.

John McManus, American Electric Power, said that there is a global demand for coal and it is important to get technology operational and distributed. The plants are looking for new technologies to meet Best Available Control Technology (BACT) standards.

Discussion – CAAAC Consideration for Updating Vision and Goals Statement

Ursula Kramer, Pima County Department of Environmental Quality, distributed the outline of the new vision and goals statement for the National Air Program. A member of the CAAAC agreed that the National Air Program is at a changing point and the CAAAC should step back and take a broader look at the issues.

Jeff Muffat, 3M, asked how this performance management idea fits into the Performance Track program at EPA. Ms. Kramer said that the Performance Track program deals with industry, but this is broader and it is not the traditional regulatory approach.

Bill Auberle, Northern Arizona University, said that he would like the Agency and the Committee to continue to address vehicle miles traveled (VMT) issues and a multimedia approach to environmental quality.

Rob Brenner, EPA, said that a lot has happened since the last time one of these statements was issued (e.g., multipollutant policies, stewardship, innovation, partnerships, regulations). The idea of this document should be to pull together everything that the EPA and the CAAAC have learned to create a new theory on how to achieve cleaner air. Ms. Kramer said that the group is looking for an idea of what success would be.

Mr. Brenner added that it would be important for the next Assistant Administrator to be able to weigh in on this document in the draft stage. It would help him/her and give him/her an opportunity to shape this vision.

Gary Jones, Printing Industries of America Graphic Arts Technical Foundation, said that he has been working on the compliance assistance program performance management plan and the biggest challenge has been the Office of Management and Budget (OMB). It is important to have conversations with them about what they want. If the intent is to deliver this document to the new Administration, then it must pass muster on these issues. In addition, the vision should structure the context of the performance measures properly.

Carolyn Green, Sunoco, expressed confusion on how the issues of a CAAAC strategic plan, mission of the organization, measurable and time-specific goals, and performance measures all fit together. The CAAAC needs to figure out what it is best-equipped to do. It may be useful to look at what other Federal Advisory Committee Acts (FACAs) are doing.

Elaine Mowinski Barron, Sierra Medical Center, noted that the CAAAC is supposed to be partnering with another FACA, the National Environmental Justice Advisory Committee (NEJAC). The CAAAC should also make sure that the performance strategies for EPA are current with the literature about performance management for institutions.

Robert O'Keefe, The Health Effects Institute, said that the document is a useful reminder on a large set of issues. EPA needs to step back and look at all of its programs and decide what the key priorities are for the next several years. These priorities should then be associated with goals and targets.

Member Lead Discussions

Pat Childers, EPA, introduced the Member Lead Discussions. He explained that various members would be presenting information on timely subject matters relevant to the committee.

National Association of Homebuilders (NAHB) National Green Building Program – Emily English and Bob Jones, NAHB

Bob Jones, NAHB, introduced himself and his organization and thanked EPA for all the work the Agency has done. Emily English, NAHB, next introduced herself and provided an overview of the NAHB Green Building Program.

Over 100,000 green homes have been built and certified by NAHB members. There are approximately 30-40 Home Builders Associations around the nation. By 2007, the demand for

green homes had outpaced supply. Builders are responding to the demand. 12-20 percent of new homes built in 2012 are expected to be green homes – up from just 2 percent in 2006.

NAHB created a website, www.nahbgreen.org, to provide tools and resources to help builders learn about green building. The site is a one-stop-shop for residential green building. Coming soon there will be a network of local green building programs, a National Green Building Standard, a scoring tool for all builder types, and a master certified green professional certification.

Ms. English next described the NAHB Green Goals. The goals are to offer voluntary, cost-effective, flexible solutions, move tools and resources online, allow any builder and remodeler to design, build, verify and certify green homes, and to enhance existing programs.

Ms. English concluded the presentation by listing several advocacy messages from NAHB. NAHB believes that market-driven, voluntary measures work best for green building and that affordability and cost-effectiveness are top priorities.

Jeff Muffat, 3M, said that there have been discussions about what strategies homebuilders can use. Has NAHB gone out to state committees that are talking about what steps to take? Ms. English responded that NAHB has a state and local government affairs department that does do this sort of outreach and networking. NAHB is getting feedback that the states are just waiting for national standard to come out.

Valerie Ughetta, Alliance of Automobile Manufacturers, asked for an estimate on the cost differences. Ms. English mentioned that one example is that the cost increase for a bronze home was \$1,400 and goes up to \$21,000 for emerald standard, but that there is a full study available from NAHB.

Ben Henneke, Clean Air Action Corporation, asked about the payback from energy savings. Ms. English responded that it varies greatly, but that usually it takes 7-10 years for payback.

Health Effects Institute Science to Inform Policy – Bob O’Keefe, Vice President, Health Effects Institute

Bob O’Keefe, Health Effects Institute (HEI), stated that the HEI was developed 25 years ago from a partnership between US EPA and the Worldwide Vehicle and Engine Manufacturers. Ten years ago the partnership was expanded to include industry and other agencies (both national and international) and nongovernmental organizations (NGOs).

Because the HEI often does research that is in the midst of controversial regulatory debates, the HEI is structured to create credibility and transparency in its work. Because the HEI works in a controversial nexus, it has a separate review committee that intensively peer reviews all of the HEI results. The HEI does not take policy positions.

The HEI products are in four key areas: targeted interdisciplinary research, re-analysis, review & synthesis of existing science, and continuous improvement in methods.

The HEI strives to make its work relevant to regulatory settings around the world. Mr. O'Keefe presented a map of the world showing the location of the HEI funded studies that are underway. There are many domestic studies as well as studies conducted in Europe for the European Union and the World Health Organization.

The HEI has a 5-year strategic planning cycle, which was developed with broad input from sponsors, science, and various stakeholders. The targeted priority topics are: (1) health effects of the air pollution mixture; (2) emerging fuels and technologies; (3) assessing the public health impact of air quality actions; and (4) enhanced international perspective.

Mr. O'Keefe reviewed the National Particle Toxicity Component Initiative (NPACT). This is a systematic, multidisciplinary, multi-sector/government initiative to compare toxicity of particulate matter (PM) components and gases in the context of sources. The study takes advantage of detailed monitoring networks across the U.S. that collect detailed speciation of PM and other pollutants and metal. In that context, toxicology and both short term and long term epidemiology were coordinated. This 5-year program is designed to deliver results for national ambient air quality standards (NAAQS) and future PM decisions. Comprehensive results of all the studies are expected in 2011 and 2012.

Mr. O'Keefe presented a map showing human population sites. There are three cohorts that comprise the long term component of this study: the American Cancer Society, the Women's Health Initiative, and the Mesa Air cohort. The Mesa Air cohort is a multi-ethnic group, which allows the HEI to have a range of potentially sensitive subpopulations in the study.

There is a toxicological piece to the study. Mr. O'Keefe presented a map showing companion animal studies (integrated 6-month mouse ambient studies in diverse PM settings). These sites are places where teams are using the same animal model to take advantage of using concentrated ambient particles (CAPs). Each area has a different traffic pattern and sulfate measure.

There is a study being done at the Lovelace Respiratory Research Institute (LRRI) where the same animals are being exposed to particles from vehicles under very controlled conditions. Putting this together allows one to step back to look at the epidemiology across parts of the country with regional variation and condition mixes to compare the animal and human studies.

The HEI has a suite of accountability studies such as short term intervention studies and studies examining actions and events over the longer term. The HEI is involved in two of these accountability studies – cleaner wood stoves (Montana) and the 2008 Olympics (Beijing).

The HEI also has a review underway looking at the health impacts of traffic. The HEI supported a study that was published in the New England Journal of Medicine, which found an elevated risk of heart attack with hours spent in traffic. The study is expected to be published in 2009.

Valerie Ughetta, Alliance of Automobile Manufacturers, asked if there is a spread of data being gathered in urban and rural/agricultural sources in the national particles and toxicity study. Mr. O'Keefe said there is an attempt to look at rural and urban areas, but data collection depends on

the location of the monitors. The first phase of the study is looking at particulates and different types of particles. The next phase, which involves linking a particular particle to a particular source, is tricky. This is the next generation of particle research so they are not at the point where they can say that they are looking at a particular source of particles in a particular area. Ms. Ughetta then asked about particle size range. Mr. O'Keefe stated that the size range is broad.

Elaine Mowinski Barron, Sierra Medical Center, said the study involving PM and toxic substances on speciation has been discussed for a long time. She asked if Mr. O'Keefe saw this study as addressing the residual risks of both criteria pollutants and toxic substances that are not addressed in the Clean Air Act (CAA). Mr. O'Keefe responded that the study is not designed to look at residual risks; the study is designed to look at particle toxicology and to help inform EPA's NAAQS decisions. Ms. Mowinski Barron asked if the study is looking at high risk populations of people with chronic disease and obesity. Mr. O'Keefe said that the cohorts have information about a range of risk factors, including socioeconomic status and obesity.

Corning: Framing of Issues on Long Term Automotive Strategic Planning – Tim Johnson, Corning Incorporated

Tim Johnson, Corning Inc., said his job at Corning is to keep an eye on the future. Corning Inc. develops emission control equipment for vehicles, power plants, and other applications. About 20 years ago there was no need for long term capital expenditure planning. Now that Corning is looking at emissions such as CO₂, PM, and NO_x, planning capital expenditure is not as simple. Mr. Johnson was hired to help in this endeavor.

Mr. Johnson stated that there is a new regulatory and market environment for automotives. Technology is evolving exponentially and it will continue to do so until we reach the capacity to absorb it. Mr. Johnson stated that the purpose of his presentation was to frame the issues for those not familiar with the playing field and to discuss what to watch to predict the future.

Mr. Johnson presented a graph showing a comparison of CO₂ regulations on vehicles worldwide as a function of time (see slide 4 of Mr. Johnson's PowerPoint presentation). The tightest fuel economy standards are in Japan, followed by Europe. China follows Europe. The U.S. has the highest standards.

Europe has been improving its fuel economy and greenhouse gas (GHG) standards at 1.3 percent per year for 10 years. They did this by penetrating the fleet with 50 percent light duty diesel. There is now a proposal to change this to 3.8 percent per year. The U.S. will have a 1 percent per year improvement beginning in 2007/2008, followed by a 4 percent per year requirement.

Mr. Johnson next showed a chart showing technology evolution being driven by regulations (see slide 5). In the early part of the 1990s, there was significant indication that criteria pollutant emissions were going to significantly drop. However, Corning did not know which technologies would be used to meet these requirements. There is now a new arena for CO₂, however, again Corning does not know which technologies will be leveraged to achieve these CO₂ targets.

Mr. Johnson next presented the framework of the auto industry and the strategic planning at which they are looking. On the powertrain side, there are gasoline and diesel technologies as listed on slide 7. These gasoline technologies are on different timelines and deliver different levels of fuel economy, emission patterns, and costs.

Light duty diesel infrastructure is in Europe. Europe has different regulations coming in 2014; they are 2.5 times higher in NOx than in the U.S. If you are a European manufacturer and you want to sell light duty diesels in the U.S., how do you balance your capital investment on hitting the European 6 regulation 8 years from now versus the U.S. regulations today? There is also conventional diesel combustion and mixed mode combustion. These two decisions need to be made in the context of a fixed fuel infrastructure. Once a refinery is built, the ratio of gasoline to diesel fuel is fairly well fixed. If more diesels are in the U.S., the refinery mix will not be correct. The price of diesel rises and the price of gasoline drops because they both have to rise to meet the new diesel demand so there is differential pricing in the market which impacts consumer choice between gasoline and diesel. There are also geographical differences. Europe is a diesel economy and the rest of the world is becoming a diesel economy with increased freight transport. There is a strong interaction between these two components.

In addition to this there is hybridization. There are battery technologies that are developing quickly. There are also Hybrid Electric Vehicles (HEV), Plug-in Hybrid Electric Vehicles (PHEV), and Extended Range Hybrid Electric Vehicles (ERHEV). The hybrid technologies feed into the gasoline and diesel technologies. There is a question of which one can be economically justified to hybridize. Hybridization technologies have to be meshed with gasoline and diesel technologies feeding into the fuels which creates the differential pricing.

Biofuels are now thrown into the mix. Gasoline supply is increasing, diesel supply is not increasing, the demand of diesel is rising, and there is differential pricing occurring because of biofuels in the gasoline and diesel arena. This drives the decision between gasoline and diesel hybrid. Mr. O'Keefe stated that we need to watch the second and third generation of fuels to see where they are most efficient.

All of this is in light of CO₂ regulation and particulate pollution emissions. Tightening regulations drives different types of technologies so lead time is needed in this regard. Finally, there is the consumer. In each box on slide 7, there is a multi-billion dollar decision being made.

Things to watch going into the future include: powertrain developments, refineries, and hybridization, biofuels, grid, regulations, and the consumer.

Tom Stricker, Toyota Motor North America, Inc., stated that with regard to the overlay of the regulations, a key point is the difference between the way different regions of the world regulate CO₂ and fuel economy. Mr. Johnson said that the current fuel mix in the fleet and the European drive cycle need to be standardized.

Mr. Childers stated that he will schedule the September Clean Air Act Advisory Committee (CAAAC) meeting for September 17th/18th or the 24th/25th. He requested the CAAAC members to email him with topics that they would like to discuss at the meeting.

Mr. Childers and Mr. Brenner thanked everyone and the meeting was adjourned.

Clean Air Act Advisory Committee Meeting
May 29, 2008
Doubletree Hotel, Arlington, Virginia

List of Attendees

Name	Affiliation
Charles Collett	National Association of Home Builders
Jed Mandel	Engine Manufacturers Association
Jeff Muffat	3M Corporation
Richard Bolton	The Center for Toxicology and Environmental Health, LLC
Chris Hessler	AJW, Inc
Valerie Ughetta	Alliance of Automobile Manufacturers
John McManus	American Electric Power
Charles Knauss	Bingham McCutchen LLP
Ben Henneke	Clean Air Action Corporation
Tim Johnson	Corning Inc.
Mark MacLeod	Environmental Defense
Tony DeLucia	East Tennessee State University
Robert Brenner	EPA
Beth Craig	EPA
Robert Meyers	EPA
Bill Harnett	EPA
Pat Childers	EPA
Anna Marie Wood	EPA
Ralph Marquez	ESP
Dan Greenbaum	The Health Effects Institute
Jack Goldman	Hearth, Patio & Barbecue Association
Janet McCabe	Improving Kids Environment
David Foerter	Institute of Clean Air Companies (ICAC)
Elaine Mowinski Barron	Sierra Medical Center
Don Clay	Koch Industries Inc.
Robert Wyman	Latham and Watkins LLP
Bill Becker	National Association of Clean Air Agencies (NACAA)
Phil Wakelyn	National Cotton Council
Michael Formica	National Pork Producers Council
Stephen Hartsfield	National Tribal Air Association (NTAA)
William Auberle	Northern Arizona University
Eddie Terrill	Oklahoma Department of Environmental Quality
Anna Garcia	Ozone Transport Commission (OTC)
Ursula Kramer	Pima County Department of Environmental Quality
Gary Jones	Printing Industries of America Graphic Arts Technical Foundation
Dennis McLerran	Puget Sound Clean Air Agency

Name

Lisa Gomez
Jack McClure
Carolyn Greene
Buddy Garcia
Kelley Green
Robert O'Keefe
Tom Stricker
Eugene Trisko
Steven Lee Hensley

Affiliation

Sempra Energy
Shell Oil Products Company
Sunoco, Inc.
Texas Commission on Environmental Quality
Texas Cotton Ginners
The Health Effects Institute
Toyota Motor North America, Inc.
Attorney at Law
USA Rice Federation