

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

Co-Chairs: Mr. Michael Walsh and Mr. John Guy

Designated Federal Official: Mr. John Guy

Minutes of the Subcommittee's Meeting on September 17, 2008
Arlington, VA

Introduction/Opening Remarks

Mr. Michael Walsh (ICCT, Co-Chair) and Mr. John Guy (EPA, Co-chair) called the meeting to order at approximately 9:00 am. The co-chairs welcomed attendees, asked for a vote on the minutes of the May 8th MSTRS meeting (approved), and reviewed the day's agenda. Ms. Margo Oge (EPA) announced that Ms. Merrylin Zaw-Mon, former co-chair has retired from EPA. Mrs. Sarah Dunham (EPA) is acting Director for the Transportation and Regional Programs Division and Mr. John Guy (EPA) is acting Deputy Director.

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

- Remarks and Update
 - Office Director—Margo Oge, EPA
- EPA Reports
 - Clean Diesel and Retrofit Workgroup—Gay MacGregor, EPA
 - NCDC Grants Competition Update—Jennifer Keller, EPA
- RFS II Update—Sarah Dunham, EPA
- EPA's GHG ANPR
 - Bill Charmley, EPA
 - Rona Birnbaum, EPA
 - Peter Tsirigotis, EPA
- Member Perspectives and Discussion on the ANPR--Moderated by Mike Walsh
 - International Climate Challenge Reducing GHG Emissions Under the CAA--Drew Kodjak, ICCT
- New Vehicle Technologies for GHG Reductions
 - Toyota--Bob Wimmer
 - Ford--Bob Holycross
 - Honda--Dave Raney
 - Chrysler--Reg Modlin
 - EPA--Dave Haugen

Presentations are posted online at the MSTRS website:

http://www.epa.gov/air/caaac/mobile_sources.html

Update from the Director

Ocean-Going Vessels and Bunker Fuel

Ms. Oge gave an update on the Office of Transportation and Air Quality's (OTAQ's) activities. Ocean-going vessels (OGVs) and bunker fuel (heavy fuel oil) was the last remaining portion of the diesel fleet to be regulated. The US has more than 40 deep water ports. As other sources are controlled, this source's contribution to overall emissions will continue to grow. EPA issued a proposed rulemaking (NPRM) in September 2008 that outlined stringent standards for OGVs and bunker fuel. Ms. Oge expects public health benefits to be greater than anticipated under the *Locomotive and Marine Standards*.¹ The EPA has scheduled a meeting with the International Maritime Organization (IMO) on this regulation, for Fall 2008. Ms. Oge noted that they would be requesting an 80% reduction in both nitrogen oxides (NO_x) and particulate matter (PM) emissions from sources using low sulfur bunker fuel.

Greenhouse Gas Emissions and Climate Change

In July 2008, the EPA released an advance notice of proposed rulemaking (ANPR) to review and solicit comments on analyses and policy alternatives regarding the effects of greenhouse gas (GHG) and the appropriateness of GHG regulations under the Clean Air Act (CAA). This action was in response to the US Supreme Court's decision in *Massachusetts vs. EPA*.

Congress had mandated the use of 36 billion gallons of renewable fuel by 2022. To qualify, fuels must undergo a complete lifecycle analysis (including fossil fuel extraction or feedstock growth, fuel production, distribution, and combustion) to ensure use of the fuel contributes to GHG reductions. EPA is working with a variety of stakeholders to evaluate lifecycle emissions during fuel production. EPA plans to finalize the renewable fuel standards (RFS) program in 2009 and they anticipate its' implementation in 2010.

EPA is addressing fuel waivers, due to recent hurricanes. Presently 11 waivers have been granted to states. To-date \$49.2 million in funding has been allocated for diesel retrofitting under the Diesel Emissions Reduction Act (DERA) for 2008. The Agency has received approximately 230 proposals requesting \$150 million. These proposals will be reviewed by the end of October 2008.

Discussions

Mr. Mike Walsh asked if EPA's staff had looked at 2030 and added up the impacts from from all the major mobile source rulemakings from Tier 2 to heavy-duty on/off-road vehicles to the locomotive and marine rule, etc. in order to evaluate the total annual lives saved from implementing these regulations. Ms. Oge stated that these regulations were expected to prevent more than 25 thousand premature deaths. There may be up to \$180 billion dollar in public health benefits.

Mr. Drew Kodjak (ICCT) applauded EPA's leadership in promoting the international marine regulatory action and noted how challenging it was to take action, particularly when there are 170 countries and numerous nongovernmental agencies (NGOs) participating. The IMO has never taken action that would force environmental action. Ms. Oge explained that the Agency has coordinated efforts with various stakeholders including the Coast Guard, International Council on Clean Transportation (ICCT), and Caterpillar. She briefly discussed obstacles in trying to convince developing countries to comply with US standards. One of the Agency's largest

¹ The Locomotive and Marine Rule was signed in March 2008. It applies to all locomotive and marine diesel engines including ferryboats and auxiliary engines. EPA estimates that the social costs, under this rule, will be \$740 million in 2030. While health benefits could range up to \$11 billion annually in 2030.

challenges is to codify these actions under the CAA. EPA will provide a proposal to IMO (by Spring 2009) that addresses emission control areas (ECAs) along US coastline where low sulfur fuel would be required. Mr. Kodjak asked if the IMO acted in the first week of October would EPA then need to adopt regulations immediately. Ms. Oge explained that the Agency was under court order and as a result would proceed without regulation under the CAA. An adoption of global regulations is ideal, but beyond their capability, at this time.

Mr. Richard Kassel (NRDC) asked if the Agency required congressional approval. Ms. Oge stated no congressional approval was needed.

EPA Reports

Clean Diesel and Retrofit Workgroup

Ms. Gay MacGregor (EPA) gave an update on the Clean Diesel and Retrofit Workgroup's activities. DERA passed in 2005 under the Energy Policy Act and included an estimated \$49.2 million, which was received in 2008. From the \$49.2 million approved by Congress, \$34.4 million (70%) was allocated to the National Clean Diesel program, while \$14.8 million (30%) of funding was allocated to the State Clean Diesel Grant program. All 50 states are participating. Some of the funding for the National Clean Diesel program was divided between diesel emerging technologies (ET) and the SmartWay Clean Diesel Finance Program. Separate from the \$49.2 million, the number of participants in SmartWay has doubled. EPA has extended its SmartWay brand to cars and light trucks and is using NASCAR and other opportunities for promotions.

The SmartWay Leaf Campaign was launched in July 2008 and uses branding to encourage consumers to look for and utilize EPA certified SmartWay cars and trucks. In general, vehicles branded with the SmartWay Leaf logo are the cleanest and most fuel-efficient vehicles available in today's market. The interest in developing countries to start a SmartWay program has increased. The workgroup is organizing an international conference aimed at addressing developing countries' concerns and questions. The conference is scheduled for December 2008, at the University of Michigan in Ann Arbor, MI.

Ms. MacGregor concluded by asking committee members to review current issues to see where the workgroup could assist (e.g., what role does diesel play in a carbon constrained world).

Discussion

Mr. Walsh asked what is required to qualify for SmartWay. Vehicles are given a score from 0 to 10, in EPA's Green Vehicle Guide.² Light-duty vehicles (LDVs) that receive a score of 7 or better qualify if they also have an air pollution score of at least 6.. Approximately 18-20% of existing vehicles are qualified. The score is determined by evaluating emissions and fuel economy.

Mr. Walsh noted that California is proposing a bill that would impose a \$30 per container fee on vessels coming into Los Angeles and Long Beach ports which is estimated to generate \$100 million. The money generated by this regulation would be used for retrofitting truck and upgrading the current rail infrastructure.

Mr. Walsh announced that the Intergovernmental Panel on Climate Change (IPCC) has organized a workshop in January 2009 to discuss and get a consensus on the role of black carbon (BC) in climate change.

NCDC Grants Competition Update

² For more information please visit <http://www.epa.gov/greenvehicles/Basic.do>

Ms. Jennifer Keller (EPA) gave an update on the National Clean Diesel Campaign's grant competition. To-date, the Agency has received 236 applicants requesting grant funding. These applicants include local and state government, nonprofit organizations, one Tribe, and other government agencies (e.g., Port/Transit Authority). Grant recipients are expected to be announced throughout the Fall 2008.

EPA expects to award between 2 to 5 grants, under the Emerging Technology program. Technologies applying for approval must make the list by September 22, 2008. Presently, EPA has 3 technologies on the list. ET grant recipients will be announced by the end of Fall 2008. EPA expects to award 3 grants under the SmartWay Clean Diesel Finance program beginning in October 2008.

On March 10, 2008, EPA published a notice for funding opportunities in the Federal Register (FR) for the State Clean Diesel program. All 50 states have indicated that they will participate in the State Clean Diesel program. To date, 35 of 50 States have expressed interest in matching funding granted under this program. Consequently, State Clean Diesel programs should receive between \$197 thousand to \$492 thousand (which includes State matches) in funding. Ms. Keller noted that the project period would run from October 1, 2008 to September 30, 2010.

Discussion

One subcommittee member asked if any appropriation predictions have been made for FY09. Ms. Keller noted that the funding amount is likely to be comparable to the amount awarded in FY08. Ms. Oge noted further that large companies have been better able to retrofit their fleets. The Clean Diesel Finance program is aimed at encouraging small businesses to retrofit their fleets through the creation of loans.

Mr. Tom Cackette (CARB) inquired on financing options made available. Mr. Jim Kliesch (UCS) noted that unfortunately the Agency did not receive proposals that addressed financing strategies. The examples highlighted by Mr. Cackette (e.g., private sector loan guarantees) will be approaches tried out at least during this first year.

Mr. Kassel complimented the Agency on its efforts to advertise these programs. He encouraged EPA to look beyond typical approaches and try to increase local matches and revolving credit so the money allocated could stretch further. Expanding the loan criteria would increase the number of buyers for services and these changes may produce fewer applicants, but more retrofitted vehicles. Ms. MacGregor explained that they were trying to expand the criteria, but there are limits within the law, particularly regarding emerging technologies funding and the use of flex fuels. Ms. MacGregor noted EPA must write a Report to Congress and that the workgroup will have an opportunity for input to that report.

Mr. David Raney (Honda) asked if the Agency would be standardizing labels for SmartWay cars. Ms. MacGregor said some companies use stickers on their vehicles' windows as one method of promoting this initiative. EPA is in the process of developing a marketing kit and package for companies participating, or that have vehicles that qualify (under the Green Vehicle Guide) and would like to participate in the program. Mr. Walsh would like to see companies compete against each other for numbers of qualifying vehicles.

Mr. John Guy (EPA) acknowledged the interest in the SmartWay program by subcommittee members and will include SmartWay as an agenda item for a future meeting. He thanked the workgroup for their assistance.

Renewable Fuels Standards II Update

Ms. Sarah Dunham (EPA) provided an overview on the Renewable Fuels Standards (RFS) II NPRM status, Texas's waiver request, and EPA's ongoing lifecycle GHG work. EPA is presently drafting the RFS II preamble text, and conducting numerous discussions with stakeholders. The proposal is expected to be finalized by Fall 2008.

In April, Texas requested a 1-year waiver from participating in the RFS program, citing major economic hardships. The Agency received more than 15,000 public comments. In August 2008, EPA denied Texas's request.

In December 2007, the Energy Independence and Security Act (EISA) was passed by Congress and signed by the President. Under EISA, fuel categories (e.g., cellulosic biofuel) are required to comply with mandated GHG performance thresholds. The Agency has the authority under EISA to adjust the lifecycle GHG threshold levels up to 10%. Ms. Dunham emphasized that the process in developing the lifecycle methodology for GHG threshold levels is complex and requires the Agency to use a range of models (e.g., FASOM and FAPRI), tools, and resources. Lifecycle emissions are influenced by direct (e.g., tailpipe GHG emissions) and indirect impacts (e.g., land conversion). Congress required EPA through EISA to consider both factors. To improve the accuracy of the GHG lifecycle analysis, EPA will conduct additional process and emissions modeling, as well as test our primary approach and assumptions using sensitivity analyses. EPA will publish the assumptions and seek comment in the NPRM. Comments submitted will provide valuable feedback regarding EPA's approach.

Discussion

Mr. Michael Rodgers (Georgia Institute of Technology) listed a number of assumptions and asked EPA to explain these assumptions. Ms. Oge said the assumptions used to evaluate corn ethanol differ from the assumptions used to evaluate fuels like coal and natural gas.

Ms. Coralie Cooper (NESCAUM) stated the GREET model assumes land is free. Ms. Dunham responded that EPA is trying to include and develop new models, because GREET did not have the ability to evaluate indirect land use impacts.

Mr. Robert Sawyer (University of California at Berkeley) asked if EPA is assuming a 100-year timeframe. Ms. Dunham stated yes and the Agency is also considering smaller periods. Mr. Sawyer further asked if the 36 billion gallons of renewable fuels would be affected by this timeframe. Ms. Dunham said there are no direct provisions in the statute that allow for the adjustment in volume. The volume could be adjusted using waivers, but not through the lifecycle analyses results.

Mr. Brock Nicholson (NC DENR) asked if the analysis could differentiate high (i.e., productive forestland) and low quality (i.e., cutover) forestland, as it relates to forestland conversion. Ms. Dunham said they have been able to identify and evaluate approximately 60% of the world's land and are soliciting comments regarding their approach.

Mr. Christopher Hesler (AJW, Incorporated) said the GHG footprint for gasoline is evolving. He asked if the Agency was evaluating this footprint. Ms. Dunham responded that EPA is required to focus on the petroleum baseline in 2005. States, like California are not bound by this statute and would likely have more data available.

Mr. Don Clay (Koch Industries) asked how the first 15 billion gallons of corn ethanol became grandfathered. If there was a statutory requirement that promoted renewable fuels that achieved GHG reductions, how would the 15 billion gallons be counted. Ms. Oge stated that the Agency had not completed the analysis and they are building their analytical baseline for future analyses.

EPA's GHG ANPR

EPA's Advance Notice on GHG

Mr. Bill Charmley (EPA) provided an overview of the development of the ANPR for GHGs, mobile sources, and light duty vehicles. In 1999, the International Center for Technology Assessment (ICTA) petitioned EPA to regulate 4 GHG pollutants from new motor vehicles. In April 2007, the Supreme Court ruled that the Agency's denial of ICTA's petition was improper and EPA has the authority under the CAA to regulate GHG. In March 2008, the Agency announced that it would be issuing an ANPR in the hopes of soliciting relevant public comments regarding the regulation of GHGs under the Clean Air Act. The ANPR, which was signed in July 2008, extends beyond the Court's initial requirements and considers additional sections of the CAA and their implications on stationary and mobile sources. It also considers GHG contributions from all US sectors, public health and welfare impacts, and reviews CAA authorities. Mr. Charmley emphasized that the ANPR does not propose actual standards or suggest specific methodologies nor would it formalize a GHG endangerment finding.

Discussion

Mr. Cackette inquired on the petition's legal timeframe. Mr. Charmley noted that on the 1-year anniversary of the Supreme Court's ruling in April 2007, ICTA petitioners filed another petition citing EPA's failure to respond within a reasonable timeframe. The Supreme Court ruled that the EPA was not unreasonable in its response time. Although, the Supreme Court ruled in favor of the Agency it still preferred that response times be within months and not years.

Mr. Bill Becker (NACAA) complimented the Agency on its efforts to display leadership. Based on Mr. Charmley's chart, *US Transportation GHG Emissions Projections and Illustrative Target Based on Proportional Reductions (Slide 9)*, Mr. Becker suggested that the Agency add a 6th line that demonstrated an 80% reduction from 1990 levels and evaluate the difference between Business-As-Usual and where we would like to be. Mr. Becker highlighted the following conclusions: a) the gap is huge, b) the Federal government's path to abating this gap does not appear to be responsive enough, and c) we have to start much earlier to address this gap in order to alleviate the problem, along with increasing reductions (e.g., obtain fuel economy of more than 35 miles per gallon (mpg)). Ms. Oge noted that the Agency had spent most of its time evaluating LDVs. She explained that the purpose of the ANPR is to receive comments and initiate a dialogue in order to address some of these concerns.

Mr. Sawyer noted that an endangerment finding is used for health effects. GHG is a global issue. Is there a parallel to health effects? Ms. Oge said the Supreme Court has labeled carbon dioxide (CO₂) a pollutant. Under Title II, the Agency has to determine to what extent the pollutant being evaluated (e.g., CO₂), affects public health and the environment. That is the prerequisite under the CAA that the Agency needs in order to regulate.

Mr. Walsh commented on test procedures and asked if there was a difference between corporate average fuel economy (CAFE) numbers and fuel economy labels. Mr. Charmley explained that the numbers presented on the graph were determined by applying a 20% reduction to the fuel economy labels to better reflect real world driving conditions. The ANPR requested comments on test procedures and methods used by EPA. EPA is completing a new rulemaking that calls for a 5 cycle-test procedure for fuel economy labels. Even though his chart says 35 mpg the benefit is calculated at 80% of 35 mpg.

Endangerment and Benefits in the ANPR

Ms. Rona Birnbaum (EPA) provided an overview on endangerment issues and benefits regarding the ANPR. In *Massachusetts v. EPA*, the Supreme Court found that greenhouse gases meet the criteria of air pollutant under the Clean Air Act and therefore, under Section 202 of the CAA, the Agency must determine whether GHGs cause, or contribute to, air pollution which

endangers public health or welfare. The purpose of the ANPR was not to propose such a determination, but to solicit comments regarding the implications of making an endangerment finding. Ms. Birnbaum noted that in the ANPR, the Agency would be responsible for defining “air pollution,” addressing climate change risks and impacts, and determining whether the endangerment of public health and/or welfare could be reasonably identified, along with the source of the air pollutants. Ms. Birnbaum noted that the Agency has also released a technical support document (TSD) for endangerment analysis, which EPA used as the foundation for scientific discussion in the ANPR.³ Overall, Ms. Birnbaum acknowledged the need for evaluating both costs and benefits associated with GHG emission reductions. She added that the Agency has estimated domestic and international benefits, based on the existing peer reviewed literature and models, but acknowledged challenges (e.g., long-term uncertainties) in conducting an economic evaluation.

Regulating Stationary Sources: GHG Emissions under the CAA: ANPRM

Mr. Peter Tsigotis (EPA) discussed strategies for regulating GHG based on the experiences with stationary sources. He raised several questions regarding the usefulness and practicality of using existing stationary source regulations for regulating GHGs, e.g. National Ambient Air Quality Standards (NAAQS), Section 112-MACT, Section 129 Solid Waste Combustors, New Source Performance Standards (NSPS), Prevention of Significant Deterioration (PSD), and Title V permits.. Under the NAAQS, the Agency could regulate GHG as a group or individually. Both nitrous oxide and methane are similar to more traditional pollutants, but CO₂ would be difficult to regulate under a NAAQS. Control of CO₂ is mostly about efficiency improvements. In the ANPR EPA looked at up to 20% reductions in CO₂ without sequestration. EPA then looked at the authorities within the CAA and the interactions of GHG with criteria pollutants and with other GHGs. EPA looked at the pollutants and sources and then at the program interactions. For stationary sources, an NSPS type program would be more attractive but would be difficult to implement without a standard or NAAQS. Issues would arise that have not been court-tested. PSD and Title V would be a cost of doing business. There would be size cutoffs. Under PSD one could address large administrative costs by starting with large stationary sources and moving down to smaller sources.

Discussion

Mr. Walsh inquired as to the role of mobile sources in imposing an endangerment finding on US companies. Ms. Birnbaum said within the last 2 years there is more information on global and regional impacts. The ANPR allows the Agency the opportunity to review and compile information. The contribution of mobile sources to impacts is not addressed by an endangerment-finding. The purpose of an endangerment finding is to define the pollution, ask whether this pollution affects public health and/or the environment, and determine what sectors cause and/or contribute to the pollution.

Mr. Becker asked if there was a correlation between an endangerment finding and a selection of findings. If the Agency only used welfare and not health what would be the impact on options used? Ms. Oge said public health and welfare were important factors to consider and it was EPA’s responsibility to evaluate both factors under Title II, but it depends on which parts of the statute are used. EPA is looking at both direct and indirect health effects and is asking for comment regarding this process. Stationary sources affect the NAAQS and an endangerment finding is not needed for regulation under NSPS. Cost-effectiveness is the criteria not health effects.

Ms. Vickie Patton (EDF) stated that Mr. David Connor had completed a White House briefing that called for a 60 mpg standard by 2020 and asked if there was an interagency review

³ EPA’s *Technical Support Document on the Benefits of Reducing GHG Emissions* (www.regulations.gov; search on “Technical Support Document-Benefits”)

process. Ms. Oge expressed interest in receiving and reviewing Mr. Connor's report. Ms. Patton asked what is the National Highway Traffic Safety Administration (NHTSA) looking at? Is EPA informing NHTSA? There is a technical dialogue and EPA comments on NHTSA's proposals. Ms. Oge will look into whether EPA's comments to NHTSA are public.

Member Perspectives and Discussion on the ANPR

International Climate Challenge Reducing GHG Emissions Under the CAA

Mr. Drew Kodjak (ICCT) briefly presented ICCT's view on GHG emissions and their impact on climate change. He encouraged the Agency to adopt lead-times and/or phase-in periods so that companies could effectively and efficiently introduce new GHG reducing technologies into the market. Mr. Kodjak also encouraged the use of lifecycle approaches based on "fuels and vehicles as a system."

Discussion

Ms. Cooper commented on how to close the gap between "Business-As-Usual" and where we would like to be. The ANPR will get us to 15-20% of where we need to be assuming transportation is 80% of the problem. Data are based on \$2.10 per gallon gasoline when current prices are closer to \$4 per gallon. EPA needs to accurately represent current gas prices and go beyond hybrids to plug in electrics, and light-weighting. The ANPR should address all types of vehicles and maximize feasible technical controls and address all of the global warming pollutants. For example methane is a long term ozone precursor and black carbon is important in fine particles and regional haze. There are co-benefits. EPA should address the forms of the standard. There should be anti-idling credits for fleets, and credits for shifting from truck to rail. EPA needs to be able to look back at the standards to tweak them in the future to meet our needs. The cost benefit analysis needs to be rethought. EPA needs to assume greater technology penetrations, maximize the technology for all the pollutants and maximize the benefits by addressing co-benefits

Mr. David Doniger (NRDC) said NRDC will submit written comments. NRDC wants new legislation to address global warming but until new legislation passes, the CAA needs to be used. He is concerned about the need for the endangerment finding. The CAA is structured so that science drives regulation. Acknowledge the science and make the determination. Establish the regulations and install the technologies over time. Pursue a cap and trade approach but know that existing technologies can be used outside of cap and trade. We are way over budget when considering a climate budget so all emissions "contribute." Black carbon probably does not fit in the basket and may need to be addressed outside the basket but still regulated. NRDC suggests that ambient standards may not be well suited for GHG. EPA has the discretion to not use that provision. The 100 ton/year cutoff in NSR is too small. New power plants and industrial sources emit large quantities and they should be regulated by NSR. It will not be a regulatory train wreck to use the CAA.

Mr. Kodjak said the US is the second largest market for passenger cars (Europe is No. 1). The whole world recognizes that the US has the best technology and is waiting for the US to act.

Mr. Nicholson agreed with Mr. Doniger. He suggested that the Agency use a simpler emissions based accounting program (e.g., Title IV) rather than the NAAQS. Mr. Becker said even with NHTSA's CAFÉ standards and 35 billion gallons of renewable fuels, the GHG gap would not be filled. EPA needs to expand dramatically on their strategies. Both ANPR and TSD are useful tools and full of valuable information, but Congress would likely not act on these proposals for another 2-3 years. This is urgent, EPA needs to establish a glide path. Mr. Cackette agreed. Vehicle efficiency needs to be higher, petroleum derived fuels needs to be 20% of what it is today, and vehicle miles traveled needs to be reduced. Timing is key. It takes 20

years to turn over the fleet and 0-10 years for technology penetration. We need efficient vehicles now and new technologies by 2015-2020.

Mr. Michael Rogers (Georgia Tech) suggested that no matter what approach was taken, programs must be sustained for 30-40 years in order to maximize benefits. Short-term target dates (e.g., 5-10 years) tend to exclude/reject long-term strategies and technologies that could be useful. We knew more about PM in 1985 than in 2000 because we disinvested our knowledge. Our views will evolve and we need to keep focused on the goal. Today we are closer to 2050 than the passage of the CAA. There hasn't been enough reflection on what costs are in terms of time and effort in implementing the CAA. For example, the target was set as attainment within 5 or 10 years and therefore long term strategies were rejected. We don't have a second chance here. There is no time frame that shouldn't be considered and we should be including land use strategies.

Ms. Siedman asked if the analysis will be redone with an adjusted price for gasoline and reminded the group that the Federal government has to show leadership because the provisions of Title II preclude States from taking action.

Mr. Charmley responded that EPA used the same fuel costs as were used in 2007 to be consistent with previous analyses and they recommend in the rulemaking updating fuel costs.

Mr. Clay discussed the proportion of MSTRS members based on their organizations and noted that fuel perspectives were underrepresented. He urged the subcommittee to include more fuel representatives as MSTRS members.

Mr. Doniger expressed concern about CEO's of the automakers coming to Washington in search of loan guarantees. NRDC supports the concept of retooling assistance if they also address better fuel economy standards.

New Vehicle Technologies for GHG Reductions

Advanced Technologies at Toyota-Toyota Motor Company

Mr. Bob Wimmer (Toyota) said businesses are driven by four factors: energy and fuels, CO₂ reductions, air quality, and urban congestion. Power generators (e.g., power plants) are the largest producer of CO₂ emissions nationwide. He recommended that the auto industry consider and adopt multiple energy sources (e.g., corn-ethanol), as well as address current and future environmental concerns and regulations. Mr. Wimmer highlighted three challenges faced by the automobile industry: balancing environmental needs with consumers' demands, mass-market appeal, and conducting lifecycle assessments. He also expressed concern for existing regulations, like CAFÉ standards, which have complicated vehicle development. Toyota has invested a significant amount of resources on hybrid vehicles (e.g., Hybrid Synergy) and considers this technology their foundation for future production. Technologies, like plug-in hybrid electric vehicles (PHEVs) can be used to address energy security and environmental issues. However, these approaches are limited (e.g., battery durability and cost) and the benefits received from these options can only be maximized using "green" fuels. Toyota is committed to investing in these technologies and expects to produce marketable vehicles by 2010.

Discussion

Mr. Sawyer inquired on Toyota's specific plans regarding battery electric vehicles (EV). Mr. Wimmer explained that no specific plans have been finalized.

Mr. Charmley inquired on the inclusion of full EVs and PHEV fuel cell batteries in Toyota's strategic strategy. Mr. Wimmer noted that for long range driving they would likely have to rely on the next generation of batteries.

Blueprint for a Sustainable Future-Ford Motor Company

Mr. Bob Holycross (Ford) said, Ford has divided their plan into three parts: near-term, mid-term, and long-term. Near-term, Ford is migrating advanced technology across current product lines. This includes 6-speed automatic transmissions, electric power assisted steering, lower rolling resistance tires, improved aerodynamics, variable intake cam timing, etc. Mid-term, the company will focus on vehicle weight improvements by promoting and using light weight materials and smaller parts, as well as, continuing to address engine size. Mr. Holycross explained that partnerships with companies like Southern California Electric and Electric Power Research Institute will help realize Ford's goals. Long-term the company will focus on sustainable growth, which will include marketing bio-fuels, and increasing electrification and hydrogen production.

Discussion

Mr. Guy noted that Ford focuses on 6-speed transmissions and asked what happened to continuous variable transmissions. Mr. Brown explained that 6-speed transmissions were reliable and as effective as any other transmission available.

Mr. Wall asked if there was a role for diesel in cars. Mr. Holycross said they have looked at diesel, but currently EcoBoost is providing comparable fuel economy. Diesel fuel is primarily used by Ford's pick-up trucks; however, there is a market for diesel cars in Europe.

Mr. Guy asked about the impact of diesel fuel prices. Mr. Brown explained that diesel prices drive consumer preference. Presently, US consumers are not paying the premium for diesel cars. Mr. Brown added EcoBoost is up to 20% more fuel efficient than conventional gasoline vehicles.

Automotive Technology Fuel Efficiency & the Market--Honda Motor Company

Mr. Dave Raney (Honda) provided an overview on vehicle market complexity. He discussed three key contributors: government, industry, and customers. Costs associated with driving (e.g., gas prices) are still relatively low compared to other forms of transportation. In the past, consumers have hesitated in embracing new technology, due to technological uncertainties (e.g., performance reliability and cost). These uncertainties often influence and at times prevent consumers from acquiring and demanding fuel saving costs. Mr. Raney explained that fuel prices have little impact on the development and implementation of new technology. Although, fuel prices have been shown to influence factors such as vehicle size it has not been effective in introducing technologies that are more efficient. A combination of higher fuel prices and regulation are vital in influencing industry's actions and consumer preference. Mr. Raney recommended that the government increase lead-time, as well as set long-term performance requirements and incentives in order to help alleviate uncertainties.

Mr. Raney also expressed concerns regarding CAFÉ standards and argued that these standards are effective at regulating technological efficiencies, but not overall mileage. One goal of CAFÉ standards is to maximize mileage. The suggested 35 mpg level is not the most efficient and effective standard that can be implemented. Independent state regulations have added to the diversion of resources, and consequently the deceleration of innovation. A national policy should be created and implemented that addresses long-term obstacles using clear and concise goals and objectives.

Discussion

Mr. Sawyer asked about Honda's experience with the Fit. Mr. Raney noted that Honda was doing well in promoting Fit and in fact, they are on backorder. Markets in Japan are quite different from US markets and as a result, Fits are selling better overseas.

New Vehicle Technologies for GHG Reductions--Chrysler Motor Company

Mr. Reg Modlin (Chrysler) provided an overview on new vehicle technology aimed at reducing GHG emissions. Current diesel technology is capable of assisting the US in its efforts to become energy independent and reduce GHG emissions. To date, the transportation sector (i.e., passenger cars and light trucks) generates an estimated 20% of "man-made" GHG emissions. Utilizing diesel fuel could improve fuel economy by 30% on average. In addition, reductions in CO₂ emission from diesel engines were comparable to reductions found in gasoline engines. The Aspen HEMI@Hybrid and Jeep@Grand Cherokee are two examples of Chrysler's commitment to producing "green transportation." A "sound energy policy" should focus on enhancing energy security, creating energy alternatives, reducing carbon emissions, and soliciting consumer input. Mr. Modlin recommended that on-going research for new technologies and alternate fuels be completed prior to implementing and enforcing new emission reduction standards. He said there is no ethanol wall but ethanol is only widely available in the Midwest. If they get ethanol out there, the vehicles will use it. Price E100 correctly and the consumer will use it. A carbon cap on fuel is needed. CAFÉ standards work and the automakers have worked with them for 30 years.

Discussion

Mr. Hessler asked if data presented assumed 100% usage of flex fuel vehicles (FFV). Mr. Modlin stated yes. One group member argued that it is not realistic to assume that all vehicles operate at 100% flex fuel. Mr. Modlin agreed to an extent with the commenter, and noted that the data presented potential benefits to using FFV (i.e., "how deep does the bucket go").

Mr. Hessler inquired on research available that compares consumer preference to pricing. Mr. Modlin stated no comprehensive testing has been done.

Greenhouse Gases and Light-duty Vehicles--EPA

Mr. Dave Haugen (EPA) provided a brief summary on the Vehicle Simulation Report and highlighted technologies available to reduce GHG from LDVs.⁴ Industry and governmental agencies traditionally focus on "big hitters" (e.g., Hybrids and advance Clean Diesel). This narrow focus has inadvertently ignored nontraditional areas or "small hitters" that could potentially provide additional GHG reductions from LDV, especially when used together. "Small hitters" are divided into three areas: engines (e.g., cylinder deactivation), transmissions (e.g., automated manual), and vehicle and accessories (e.g., air conditioning (A/C) systems). There is no incentive to address or consider "small hitters," particularly A/C systems as a source of GHG emissions.

EPA is investigating the potential benefits of "small hitters" and exploring other alternatives, like hydraulic hybrid vehicles. These technologies have the potential to reduce CO₂ emissions by 30%-40%, which would account for an estimated \$800-\$1,300 in annual fuel savings. A reduction in the size and weight, while maintaining performance levels for LDVs is another approach industry and government could take to influence consumer preference and reduce GHG emissions. The "market response" to high priced gasoline indicates that there will be minimal resistance to change by consumers and producers.

Discussion

⁴ *Staff Technical Report: Cost and Efficiencies Estimates of Technologies Used to Reduce Light-duty Vehicle Carbon Dioxide Emissions* (EPA420-R-08-008, March 2008)

Mr. Modlin commented on consumer preference and consumers' choice for performance which has resulted in large and heavy vehicles. Fuel economy is a design constraint. The companies compete on performance.

Mr. Sawyer asked about EPA's fuel economy test procedure and inquired on the number of vehicles tested on a 5-cycle procedure. Mr. Haugen stated that every vehicle is tested. Ms. Oge added that no test was 100% accurate. Stickers on the vehicles represent a weighted average and do not take into account aggressive driving, the frequency of A/C usage, etc. Mr. Brown noted that Ford was looking at A/C units and how they affect fuel economy, particularly in hybrid vehicles.

Wrap-Up

Mr. Guy thanked everyone for attending the meeting. He reminded members that membership renewal is in November. EPA is required to rebalance the subcommittee every three years and he will be contacting members regarding their participation in the MSTRS. The meeting adjourned at approximately 4:00pm.

Mobile Sources Technical Review Subcommittee

September 17, 2008

Attendance Sheet

Presenters and Subcommittee Members

Name	Organization
Bill Charmley	Environmental Protection Agency
Bob Holycross	Ford Motor Company
Bob Wimmer	Toyota
Brock Nicholson *	North Carolina Division of Air Quality & North Carolina Department of Environment and Natural Resources
Coralie Cooper *	Northeast States for Coordinated Air Use Management
Christopher Hessler	AJW, Incorporated
Dave Haugen	Environmental Protection Agency
David Raney *	American Honda Motor Company, Incorporated
Dennis McLerran	Puget Sound Clean Air Agency
Don Clay *	Koch Industries, Incorporated
Gay MacGregor	Environmental Protection Agency
Jennifer Keller	Environmental Protection Agency
John Johnson *	Michigan Technological University
John Wall *	Cummins, Incorporated
Lori Stewart	Environmental Protection Agency
Margo Oge *	Environmental Protection Agency
Michael Rodgers *	Georgia Institute of Technology
Michelle Robinson *	Union of Concerned Scientists
Mike Walsh *	Environmental Protection Agency /Consultant
Nancy Seidman *	Commonwealth of Massachusetts
Nicholas Cernansky *	Drexel University
Patty Monahan *	Union of Concerned Scientists
Peter Tsirigotis	Environmental Protection Agency
Reg Modlin *	Chrysler, LLC
Richard Kassel * (David Doniger substituted for Mr. Kassel after lunch)	National Resources Defense Council
Robert Brown *	Ford Motor Company
Rona Birnbaum	Environmental Protection Agency
Sarah Dunham	Environmental Protection Agency
Timothy Johnson *	Corning, Incorporated
Tom Cackette *	California Air Resource Board
Vickie Patton *	Environmental Defense
Attendees	
Bob Maxwell	Association of International Automobile Manufacturers (Consultant)
Brian Turner	California Air Resources Board
Clark Knauss	Bighman, LLP
Dave Cetola	Johnson Matthey
Dave Gelman	New West Technologies

Mobile Sources Technical Review Subcommittee
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David Lax	American Petroleum Institute
Doug Greenhaus	National Automobile Dealers Association
Drew Kodjak	International Council on Clean Transportation
Ed Crupi	Environment Canada
Jack Gehring	Caterpillar
Janea Scott	Environmental Defense
Jessica Robinson	Mitsubishi Motors R&D
Jim Kliesch	Union of Concerned Scientists
Joanna France	Hart Energy Publishing
John Kneiss	Hart Energy
Julie Becker	Alliance of Automobile Mfrs.
Manjit Kerr-Upal	Environment Canada
Mark Monohon	NGK Metals Corporation
Marilyn Herman	Herman & Associates
Martin Jeter	VA Department of Environmental Quality
Pat Childers	Office of Air Radiation/EPA
Robert O'Keefe	Health Effects Institute
Robert (Bob) Sawyer	University of California at Berkeley
Peter Haywood	New West Technologies
Rasto Brezny	Manufacturers of Emission Controls Association
Robert Wyman	Latham and Watkins, LLP
Roger Fairchild	Consultant
S. William (Bill) Becker	National Association of Clean Air Agencies
Stephen Hartsfield	National Tribal Air Association
Tim Hogan	National Petrochemical & Refiners Association
Wendy Clark	National Renewable Energy Lab (Rep. DOE)
Press	
Anthony Lacey	Inside EPA
Kate Winston	Inside EPA
Technical Staff	
John Guy*	Environmental Protection Agency, Designated Federal Official
Nanishka Albaladejo	EC/R Incorporated
Becky Battye	EC/R Incorporated

*Denotes Subcommittee Member