Federal Advisory Committee Act
Clean Air Act Advisory Committee

Mobile Sources Technical Review Subcommittee

Co-Chairs: Mr. Drew Kodjak and Ms. Gay MacGregor Designated Federal Official: Ms. Elizabeth Etchells

Summary of the Subcommittee's Meeting on May 5, 2015
Alexandria, Virginia

Introduction/Opening Remarks

The meeting was called to order at approximately 9:00 am on May 5, 2015. Mr. Drew Kodjak welcomed everyone to the meeting, thanked members of the Ports Workgroup for their efforts and attendance at a meeting the previous day, reviewed the agenda, and asked all subcommittee members and persons in attendance to introduce themselves. Ms. Gay MacGregor asked for a vote on the minutes of the December 9, 2014 MSTRS meeting (approved).

Mr. Chris Grundler welcomed everyone in attendance and thanked the MSTRS members for their participation in this process. He also gave special thanks to the members that have provided years of service to the subcommittee and will be leaving as their terms expire. Mr. Grundler gave an overview of the status of ongoing work at OTAQ. He first noted that in keeping its promises for clean air, the EPA has done a lot over the last ten years to develop standards that will produce public health benefits, and these standards must now be executed. The EPA has been shifting resources towards implementation and compliance activities. One activity they have engaged in is to work with China in a compliance partnership to help ensure imported engines and equipment to the U.S. meet the U.S. standards. The EPA has also continued to work on climate standards with a second round of greenhouse gas (GHG) standards for the commercial truck sector. They have had over 300 meetings with stakeholders and will soon be publishing the proposed standard. They are also working on the mid-term evaluation of the 2025 vehicle standards. The first technical assessment report will be issued next summer and will be followed by a proposed determination. The final determination will be issued in 2018. Mr. Grundler also noted that the EPA will be soon be proposing an endangerment finding for GHG emissions from aircraft. On work related to fuels, Mr. Grundler stated that the EPA will be proposing a 3-year renewable fuel standard, and this rule should be finalized by November 30, 2015. The EPA will also be taking comment on the heavy-duty standard and aircraft standard this summer. Related to efforts to reduce emissions in communities, Mr. Grundler noted that the EPA Administrator, Ms. Gina McCarthy, visited three ports during Earth Week this spring, and this has generated some momentum with the Agency's work with ports and port communities.

Presentations

Presentations are posted online at the MSTRS website: http://www.epa.gov/air/caaac/mobile_sources.html. The notes below primarily reflect the discussions that occurred in response to the presentations.

Ports Work Group Panel – Mike Geller, EPA and Lee Kindberg, MAERSK

Mr. Geller provided an update on the MSTRS Ports Initiative Workgroup's activities and accomplishments to date. He reviewed the charge of the workgroup and the status of each subgroup's

activities. He noted that the definition of a port was finalized at the workgroup meeting the previous day, but it may be revised if needed to encompass the work of the port inventories and metrics subgroup. The federal coordination subgroup has developed a summary of major port funding sources and will be working on developing guidance on coordination and leveraging, as well as guidance about how to access the aforementioned funding programs. The community-port engagement subgroup has completed a survey of ports about how the ports interact with their communities. This subgroup will be sharing their survey analysis, developing another survey to assess the community perspective, and will be coordinating with the EPA in its development of a Ports curriculum. The subgroup addressing barriers to technology implementation has identified the most critical barriers and some possible strategies to reduce these barriers. The subgroup will next be focusing on operational strategies, understanding the barriers the permitting process produces and understanding the role of third-party verification in the process. The metrics and inventories subgroup has identified some elements of inventories that should be considered in a ports program. This subgroup will be working on recommendations for different types of inventories for different purposes, recommending specific inventory metrics and recommending communications tools for a variety of stakeholders. Mr. Geller noted that a new subgroup was created during workgroup meeting to address program design. This subgroup only met briefly during the workgroup meeting, but it has already developed some preliminary building blocks that it would recommend for inclusion in the design of a ports program. The next steps for the workgroup are to meet via conference calls and webinars and through a face-to-face meeting in the fall/winter of 2015. Mr. Geller remarked that the workgroup is on track to present draft recommendations at the fall/winter 2015 MSTRS meeting.

Discussion

Mr. Kodjak asked whether the EPA was currently developing a ports inventory and how such work would tie in with the Ports Workgroup inventory work. Mr. Geller replied that the EPA is doing a macro-level emissions inventory using data from the National Emissions Inventory (NEI) with a baseline of 2011. The EPA is also working on projections to future years and analyzing how a suite of control technologies could affect port emissions in those future years. Ms. Kindberg noted that this macro-level assessment is an EPA-led effort, while the Ports Workgroup is working to provide advice to ports on how to do port-specific inventories.

Mr. Kodjak noted that it can be difficult to get parties interested in participating in voluntary programs and asked how the EPA planned to move the program forward. Mr. Geller responded that the EPA macro-level ports assessment may help identify some low-hanging fruit for operational or technical control strategies that could be employed through a voluntary program. He also noted that the workgroup is trying to develop an approach that would be inclusive of all ports, perhaps through the use of a tiered approach. They are also working to understand the economic benefits the program may provide. Ms. Kindberg commented that the workgroup may try to incorporate some tools from ISO 14001 to do a prioritization of program elements.

Mr. Steve Flint noted that most ports are in non-attainment areas, or soon will be for ozone, and he commented that the program may not be voluntary for those ports at that point. He also commented that if there is a threat of an imposed control, then the entities get more creative in finding solutions to the issue than if they are acting in response to a regulation. He noted that the state implementation plan (SIP) process can help identify controls that could be used in a voluntary program as well.

Mr. Joe Kubsh stated that the biggest outcomes of the workgroup have been an exchange of thoughts and ideas about what the successful strategies for ports have been and the idea that any ports program would provide a menu of options with examples or information about how each of those options have worked at other ports.

Ms. MacGregor noted that most ports are not in non-attainment areas, and there are only about 13 out of 91 ports that have an emissions inventory. She also noted that most ports do not have dedicated environmental staff. Ms. MacGregor commented that the EPA is working on how to scale a SIP-like inventory down to fit the needs of ports in attainment areas. She also noted that the micro-scale port inventory the EPA is working on is just starting, but they hope to use information from that effort to inform the needs of inventory development for the ports that are in attainment areas. Ms. Kindberg also noted a need for ports to be able to take credit for reductions they have achieved during the SIP process.

Mr. Grundler commented that he was pleased to hear that the ports workgroup is taking a data-driven approach to recommendations for a program. He also supported the idea of a tiered approach. He asked how much a barrier competition between ports presents to the program. Ms. Kindberg responded that the port authorities do not want to have a rating system, but they are supportive of a program that would focus on achieving emissions reductions. She noted that some of the ports are very competitive with each other, so any ports program would have to find the right balance in obtaining and sharing data with the need for confidentiality surrounding certain parameters, such as fuel use and cost.

Mr. Arthur Marin asked how the ports would benefit from program participation if there is no recognition of their efforts or achievements. Ms. Kindberg replied that the ports do want to be able to market their green-ness and take credit for their efficiencies and emissions reductions, but they do not want a metric that would directly compare the ports to each other. One way ports could accomplish this would be to communicate the emissions reductions achieved and the level of maturity or participation in the program, rather than having a letter-grade type of metric to communicate. Ms. MacGregor also noted that ports would be able to communicate emissions reductions to their communities. She mentioned that participation in a program like this would help some ports and port communities develop trust with each other.

Mr. Grundler mentioned that an important element in the program design will be to determine how progress in emission reductions will be measured. Ms. Kindberg agreed that the program designers will need to be careful in determining what to measure and how because it is possible with a bad design to incentivize the wrong behaviors. She noted that the metrics subgroup is discussing not only inventories, but also how to make the information usable and communicable to various audiences.

Mr. Grundler asked how the group will make recommendations and whether the recommendation process would be consensus based. Mr. Geller replied that there has been a lot of discussion within the workgroup, and they are going to try to move toward recommending a compact framework.

Mr. Mridal Gautam noted that the workgroup seemed to be working toward guidance for a standardized inventory and asked what a standard inventory would be. Mr. Geller responded that the workgroup is not trying to create or design a standard inventory but to provide recommendations to the EPA. Ms. Kindberg added that the workgroup is trying to prioritize recommendations to the EPA on how to build a ports program and will recommend some elements to include in the program as well as some elements to include in the inventories.

Presentation: Aircraft Emissions – Mike Samulski, U.S. EPA

Mr. Samulski summarized the EPA's standards development activities related to lead, CO_2 and PM emissions from aircraft. Aviation fuel for piston-engine aircraft is the last remaining fuel to have lead in it, and this fuel use is responsible for 60 percent of the lead emitted to air. The EPA is currently estimating lead concentrations near airports and is conducting a near-airport demographic analysis in support of an endangerment finding. The EPA plans to propose the results of the endangerment finding in 2017 and issue a final finding in 2018. If there is a positive finding of endangerment, the EPA will consult with the FAA in developing standards to address lead emissions. Aircraft also contribute about 3 percent to the total U.S. GHG emissions and comprise 11 percent of the U.S. transportation sector GHG emissions. The EPA is proposing an endangerment finding for aircraft GHG emissions in May 2015 and plans to also issue an ANPR requesting public comment on CO_2 standards for aircraft in May 2015. The EPA is working with the International Civil Aviation Organization (ICAO) to establish global CO_2 standards for aircraft, and the ICAO is expected to finalize CO_2 standards for aircraft in February 2016. The ICAO standards are not self-implementing, and in the U.S., the EPA and FAA must issue regulations to implement the ICAO standards. The ICAO is also developing PM standards for aircraft engines and is expected to finalize these standards in February 2019.

Discussion

Mr. Pamela Campos asked about the percentage of the fleet that would be subject to the CO_2 standards. Mr. Samulski stated that it would depend on whether the standards would apply to new builds or new types of aircraft, but he thought the International Council on Clean Transportation (ICCT) may have some estimates.

Mr. Jim Kliesch asked why the test procedures discussed would not include takeoff and landing. Mr. Samulski stated that for CO_2 it was a compromise position of the group to try to set the standard for where the most fuel burn occurs. An audience member commented that it seemed a disproportionate amount of emissions would occur during takeoff and asked why that would not be included in aircraft emission standards. Mr. Samulski responded that takeoff would be included in the PM standards, but for CO2, they are trying to target the portion of the flight in which the most fuel burn occurs.

Mr. Luke Tonachel asked whether the regulation could become applicable when aircraft receive upgrades. Mr. Samulski responded that this option has been considered, but it would still be a long time before a significant number of aircraft would be subject to the rule under that option.

Ms. Jackie Grimshaw asked whether the assessments for lead would include a study of lead deposition to soil and water and why the study area was limited to 500 meters around the airports. Mr. Samulski was unsure whether the assessment would be considering deposition. Mr. Grundler added that there is a steep drop-off in emissions with increasing distance from an airport, so that is the reason the assessment will focus on emissions within 500 meters of airports.

An audience member asked whether the EPA has worked with the International Air Transport Association (IATA) also or just the ICAO. Mr. Samulski replied that IATA has worked with the ICAO on this, so the IATA position has been represented in this process.

Presentation: Raising Gasoline Octane Rating, The Opportunities and Benefit to New Vehicles – Cynthia Williams, Ford

There are many market drivers, in addition to regulatory requirements, that must be considered when developing and selling automobiles. To meet the CAFE standards, significant increases in miles per gallon are required in the next 10 model years. Fuel quality and vehicle hardware together are a system and together determine the level of emissions. A higher octane fuel will enable the use of engines with higher compression ratios, which can improve fuel economy. However, while fuel economy can be improved somewhat using either only higher octane fuel or engines with higher compression ratios, the benefit is much higher when a combination of higher octane fuel is used with an engine optimized for that fuel. In addition, with combined higher compression ratio engines and higher octane fuel, reductions in net well-to-wheels costs, CO_2 emissions and petroleum consumption can be realized. The infrastructure to disseminate higher octane fuel is currently lacking and would need to be built. This presents a challenge and a shared responsibility for all stakeholders to collaborate on moving toward a future higher octane gasoline fuel. Ford believes the most cost effective evolution of fuels is to increase the minimum octane rating across the board.

Discussion

Due to time constraints, questions were held until after the last presentation in this group of presentations about raising gasoline octane.

Presentation: Octane Benefits – Coleman Jones, General Motors

Increasing fuel octane facilitates an increase in engine compression ratios, but with low octane fuel, the use of these engines would lead to “knock” and customer dissatisfaction. Work is therefore needed to manage mis-fueling with low octane fuels. The well-to-tank-to-wheels amount of CO_2 emissions produced can be reduced the most when the fuel is optimized at 98 RON or 100 RON with either 10 or 20 percent ethanol content. Today, premium gasoline has poor customer value in that the additional costs are more than the efficiency gains, and premium fuel is viewed as a performance fuel in the U.S. Since 1990, the market share of premium fuel has decreased from about 30 percent to about 10 percent, and the costs have also gone up. The octane in fuel today is less hydrocarbon octane due to the increased use of ethanol, which boosts octane. In order to increase the octane in fuels, the traditional hydrocarbon octane could be increased, ethanol use could be increased, low octane components could be reduced or new high octane molecules could be introduced. There is a “chicken-and-egg” problem with introducing a new fuel, where optimized vehicles requiring these fuels need to be in the market, and the higher octane fuel must also be broadly available. Mis-fueling legacy cars with higher octane fuel containing over 10 percent ethanol can harm those vehicles, and mis-fueling higher compression ratio engines with lower octane fuel can also cause harm. All stakeholders will need to work together to address the challenges of moving toward higher octane fuels.

Discussion

Due to time constraints, questions were held until after the last presentation in this group of presentations about raising gasoline octane.

Presentation: Presentation to Clean Air Act Advisory Committee Mobile sources Technical Review Subcommittee – Jim Guthrie, California Air Resources Board

California's strategies for reducing GHG emissions include the California Reformulated Gasoline (CaRFG) regulations and the Low Carbon Fuel Standard (LCFS) regulations. The CaRFG requires certain specifications for California motor-vehicle gasoline, as determined by the California Predictive model. This model correlates emissions with fuel properties to determine fuel specifications for oxygen, sulfur, benzene, olefin and total aromatic hydrocarbon contents, as well as T90, T50 and Rvp, but it does not specify an octane content. The LCFS require a 10 percent reduction in carbon intensity by 2020, which may be met by using fuel additives, using alternative fuels, using renewable gasoline or using electricity. When considering increases in fuel octane to reduce GHG, one potential way to increase octane is to use a greater amount of ethanol. However, the impacts must be studied, and a regulation to require a higher ethanol or higher octane content would take a minimum of 6 years to finalize. This amount of time is needed to complete planning, testing and risk assessments, and the rulemaking process.

Discussion

Due to time constraints, questions were held until after the last presentation in this group of presentations about raising gasoline octane.

Presentation: Biofuels in the Clean Transportation Future – Luke Tonachel, Natural Resources Defense Council

The CAFE standards requirement of 54.5 miles per gallon is feasible without new liquid fuels if new fuel-efficient vehicle technologies are implemented. However, only about 4 percent of the recent model year (2014) vehicles meet the 2025 CO_2 targets. It is possible that the use of low-carbon biofuels could be increased in the future, including the use of cellulosic biofuel. By 2050, it is possible that oil demand could be reduced by 60 percent by using advanced biofuels, particularly for transportation sectors with lower abilities to electrify, such as heavy-duty vehicles. However, biofuel feedstocks and technologies must be scaled up to ensure this scenario and to realize large GHG reductions.

Discussion

Due to time constraints, questions were held until after the last presentation in this group of presentations about raising gasoline octane.

Presentation: Accelerating the Path to Economic and Sustainable Fuels and Vehicles (Optima) – Reuben Sarkar, U.S. Department of Energy (DOE)

The goal is get to better fuels and vehicles sooner. Internal combustion engines will dominate the fleet for decades; however, it is possible to get higher efficiencies and lower emissions with these engines. It is feasible to reduce petroleum use by 30 percent by using better fuels and increasing engine efficiency. With a 17-year fleet turnover, an impact in 2050 requires vehicle introduction in 2030, which requires solutions to be introduced in the 2020's, which in turn requires research and development activities today. Lower GHG fuels are essential and can include biofuels and low-carbon petroleum derived fuels. The properties of any alternative fuels must be evaluated and tested in engines. Work is needed to identify market-driven solutions and to identify and mitigate barriers to wide-scale

deployment of a new fuel. The DOE Optima evaluation criteria for a new fuel includes 10 criteria related to emissions, costs, infrastructure needs and other factors. The DOE is involved in this process to help harmonize the relationships among fuels, engines and vehicles through standards and to coordinate across sectors, including vehicle manufacturers, fuel producers, fuel distributors, government and consumers.

Discussion

Mr. Kliesch commented regarding Mr. Tonachel's presentation that at high load, fuel economy cannot be maintained without higher octane. Mr. Tonachel responded that optimization would occur at a higher octane, but the footprint could be maintained without it. He noted that some equipment may be better at lighter load and some may operate better at lower octanes.

Mr. Dan Short asked Mr. Jones how the refinery emissions were estimated in the well-to-tank-to wheels CO_2 emissions estimates he presented. Mr. Jones replied that it was a 100,000 barrel per day scenario modeled using the ASPEN model.

Mr. Dana Lowell asked the auto manufacturer representatives whether it was not possible to get 50+ miles per gallon without higher octane fuel or whether it is just the preferable way to get there due to costs or other factors. Ms. Williams responded that higher octane fuels would be one tool to use to help reach the goals. Mr. Kliesch responded that there are exciting opportunities for new technologies like downsized turbo engines, but that without new fuels it will be difficult to get increased miles per gallon and low emissions.

Mr. Lowell commented on the decrease in hydrocarbon octane in recent years and asked what had happened to cause this decrease. Mr. Short responded that as ethanol content has increased and provided octane, the refining processes were adjusted to reduce the hydrocarbon octane so that the petroleum-ethanol blend would have the minimum rating of 87. Mr. Kodjak asked whether the refineries could reclaim the additional octane without any hardware changes. Mr. Short responded that the refineries could do that if the customers wanted it and were willing to pay for it.

An audience member asked about the impacts of mis-fueling. Mr. Jones replied that if a lower octane fuel was used in the new vehicles requiring higher octane, the vehicle would get knock and the control system would start to retard spark. A cascade of issues would result that would decrease efficiency and performance, and there would be higher emissions.

Mr. Flint asked what manufacturers would do if premium fuel was not available. Mr. Jones responded that if premium fuel use could not be guaranteed, the engines would be designed to either have reduced compression ratios or to retard spark. The engines would be not be fully optimized with either scenario.

Presentation: Raising Gasoline Octane - The Considerations – Chris Standlee, Abengoa Bioenergy

Abengoa is an international company that applies new technological solutions in power generation, power transmissions and distribution, water treatment and desalination, and in biofuels. The company has 14 biofuel plants in the USA, Europe and Brazil, with a capacity to general 840 million gallons of biofuels. They have recently opened a commercial-scale cellulosic plant in Hugoton, Kansas and have begun operation at a waste-to-biofuel demonstration plant in Europe. Ethanol has an octane

number of 113 and has unique characteristics that make it highly attractive as the source of octane in a high-octane future fuel. The optimum blend of fuel is likely to be 25 to 40 percent ethanol, as there is a non-linear influence of ethanol, with the most benefit to power and efficiency at lower levels. There are issues to consider in the development of a "renewable super premium" fuel, such as ethanol supply certainty, fuel distribution and infrastructure limitations and the impact on legacy vehicles during transition. Ethanol production in the U.S. is near 15 million gallons per year. Research suggests there is ample land and potential biomass feedstocks to surpass the mandated 16 billion gallons of cellulosic biofuels in 2022. In addition, the DOE and Oak Ridge National Lab state that the infrastructure barrier is not trivial but has been overstated in the past and is less complex than many other alternatives. There are many vehicles on the road today that can use E15 fuel, but very few stations offer this fuel. As a note, the world's fastest car is a flex fuel vehicle, which has 1341 horsepower when using E85 fuel.

Discussion

Mr. Kodjak asked why Abengoa is building plants in South America. Mr. Standlee responded that Brazil has a captive market mandated by the government, which is to use either 27 percent or 100 percent ethanol.

Mr. Grundler asked when the Hugoton plant will produce at a regular rate. Mr. Standlee replied that they will be at full production levels by the 4th quarter of this year and hopefully by the 3rd quarter.

Presentation: High Octane Gasoline Production – Dan Short, Marathon Petroleum Company

Marathon has a focused and integrated network of refineries, terminals and pipelines within their marketing area of the U.S. On the potential for the refining industry to produce a high octane motor fuel, it is likely that a hydrocarbon-based solution would be used, given the lower infrastructure requirements compared with increased ethanol blending. To do this, a combination of existing processing technologies would be used, such as catalytic reforming, isomerization and dehydrogenation/dimerization. While increased ethanol blending could be done, it would likely require new ethanol manufacturing capacity, product distribution systems, and retail infrastructure, whereas the product distribution and retail infrastructure currently exists to deliver a hydrocarbon based, high octane motor gasoline product. The timetable to produce higher octane fuel would likely run concurrently with the automotive fleet turnover, given the minimal infrastructure and capital investment requirements. Capital investments needed to produce higher octane fuels would occur as the market demands these fuels. Marathon envisions that 87 AKI gasoline would continue to be offered in parallel with the high octane gasoline until the automotive fleet is effectively turned over. There are challenges to using a higher octane fuel. It will likely costs more to produce, and mis-fueling is a concern. It is also unclear whether there will be a net carbon benefit to higher octane fuel, given the additional energy required to manufacture it.

Discussion

An audience member asked for clarification that hydrocarbon octane could be produced the way it was previously, but now with additional costs. Mr. Short clarified that adding back the hydrocarbon octane that used to be produced can be done, but it will make the fuel more expensive due to the additional processing costs.

An audience member asked whether Mr. Short had a sense about how much CO_2 would be generated at the refinery by producing higher octane fuel. Mr. Short was not sure exactly how much CO_2 would be produced or whether it would be offset by the lower CO_2 emitted from vehicles using higher octane fuel.

Mr. Bob Anderson commented that the refineries would not likely use the exact same equipment and processes that were previously used to produce higher hydrocarbon octane fuel before the ramp up in ethanol use. It is likely that some capital expenditure would be done to optimize the process.

Presentation: EPA Mobile Sources Technical Review Subcommittee – Bruce Heine, Magellan Pipeline

Magellan has the nation's longest refined product pipeline system, with over 9,000 miles of pipeline, 52 terminals and 42 million barrels of storage. It is a common carrier, multi-product pipeline system that operates on a "hub and spoke" basis. Today Magellan transports, stores and distributes 12 grades of gasoline through the pipeline system. Adding new grades of gasoline often reduces operating efficiencies due to decreased fungibility, the need for smaller batches, the need to segregate products and additional storage requirements. In 2013, Magellan converted the pipeline system from 87 to 83 octane, and this change created additional demand for premium gasoline (91 octane) and ethanol. Magellan constantly reviews the services they offer to ensure they meet the needs of their customers and has recently increased premium gasoline storage capacity, ethanol storage capacity, is extending the pipeline, and has made portions of the pipeline bi-directional to accommodate changes in the market.

Discussion

Mr. Kodjak asked whether ethanol could be transported in pipelines. Mr. Heine replied that one company is doing it in Florida with denatured ethanol, but stress corrosion cracking is an issue with ethanol more than it is for other hydrocarbon-based fuels. In general, the pipeline is the safest and most reliable way to move large quantities of liquids.

An audience member asked whether it was true that, by statute, the DOE cannot give loan guarantees for ethanol pipelines. Mr. Heine replied that this is true.

Presentation: EPA's Regulatory Authority to Address Octane – Paul Machiele, U.S. EPA

Congress has given the EPA the authority to regulate motor vehicle and nonroad fuels through the Clean Air Act (CAA) section 211, and no other Federal agency has the authority to regulate fuels (except the Federal Aviation Administration has authority over aircraft fuels tied to an EPA finding of need). The EPA's authority is limited to regulating fuels in order to address emissions and not to address vehicle or engine performance. The EPA has a history of regulating fuels, dating back to unleaded gasoline in 1974, but until octane became an emissions issue for CO_2, octane remained outside the EPA's purview. Section 211(c) of the CAA is the most likely source of authority to allow the EPA to regulate octane. Two paragraphs in this section provide authority, with one, CAA 211(c)(1)(A), focused on emissions that would endanger public health and the other, CAA 211(c)(1)(B), focused on emissions that would impair the performance an emissions control device. Under the authority of CAA 211(c)(1)(A), the EPA must first make a finding that emissions from a fuel or fuel additive cause of contribute to air pollution that endangers public health and welfare. In addition, the EPA must also determine whether there are other technologically or economically feasible means of achieving the

needed emissions reductions before it can set a fuel or fuel additive standard. Under the authority of CAA 211(c)(1)(B), the EPA must to show a tie to emissions associated with fuels of higher or lower octane. In addition, the EPA would also be required to perform a cost-benefit analysis comparing emission control systems that do and do not require the fuel change. Also, the EPA recently finalized light-duty GHG standards based on vehicle technologies, and to use the authority of CAA 211(c)(1)(B), the EPA would need to look beyond the levels of those standards. There are also several requirements the EPA would have to meet in order to prohibit the use of a certain fuel. Using the Tier 3 rule as a case study, the timeframe to complete all the necessary steps would be approximately 10 years before any octane standards would be finalized, and the phase-in period for compliance could be several years.

Discussion

Ms. Campos noted the CAA section 211(c) requires many analyses, and it sounded like the EPA would be required to show the benefits outweigh the costs. Mr. Machiele responded that generally this is true, although it may not be stated explicitly in the CAA.

Mr. Flint commented that it sounds like it will not be necessary to require the oil companies to make higher octane fuels. He also said that EPA regulations may not be the right solution for the problem of trying to ensure consumers use higher octane fuel.

An audience member asked about CAA section 202(l), which provided the authority for the 2007 benzene regulation, and he noted that this authority seemed to avoid some of the hurdles of CAA section 211(c). Mr. Machiele responded that he was not sure about the authority provided by that section and would look into it, but regardless of the CAA authority, a cost-benefit analysis would be required.

Mr. Marin noted that octane is not a fuel additive but a fuel property, so the EPA would probably need to look at all available pathways to regulations, more like ethanol or higher hydrocarbon octane. Mr. Machiele responded that he agreed, and the purpose of the presentation was mainly to show the regulation process and how long it would take.

Ms. Campos stated that regulatory action can take a long time, but there is a real need for action now. She asked what this group could do to move this conversation forward. Mr. Grundler stated that the EPA needed to reflect on how this committee could advance the dialogue. Mr. Kodjak noted that there are examples from Europe, where higher octane fuels are used, and he offered that the committee could gather and review this European data.

Adjournment

Ms. MacGregor informed the subcommittee that the next MSTRS meeting will likely be during the first week of December in Ann Arbor, Michigan. She noted that having the meeting there would allow for the new subcommittee members to see the EPA lab facilities there. Ms. MacGregor mentioned that the Ports Workgroup meeting may occur earlier in the year and not in tandem with the next MSTRS meeting.

Mr. Kodjak and Ms. MacGregor thanked the subcommittee members, with special thanks to the departing subcommittee members, for their participation and adjourned the meeting.

Mobile Sources Technical Review Subcommittee
May 5, 2015

Presenters and Subcommittee Members in Attendance

Name	Organization	Attendance
Don Anair	Union of Concerned Scientists	
Bob Anderson (for Philip Heirigs)	Chevron	X
Robert Babik	General Motors	X
Deborah Bakker	Hyundai	X
Pamela Campos	Environmental Defense Fund	X
Lindsay Chason	Home Depot	
Steve Flint	New York Department of Environmental Protection	X
Mridul Gautam	Mid-Atlantic Research Institute	X
Jacky Grimshaw	Center for Neighborhood Technology	X
Chris Grundler	U.S. EPA	X
Jim Guthrie (for Alberto Ayala)	California Air Resources Board	X - by telephone
Bruce Heine	Magellan Pipeline	X
Coleman Jones	General Motors	X
Robert Jorgensen	Cummins	
Lee Kindberg	Maersk	X
Drew Kodjak	International Council on Clean Transportation	X
Joseph Kubsh	Manufacturers of Emission Controls Association	X
Dana Lowell (for Thomas Balon)	MJ Bradley and Associates	X
Gay MacGregor	U.S. EPA	X
Paul Machiele	U.S. EPA	X
Arthur Marin	Northeast States for Coordinated Air Use Management	X
Jim Kliesch (for Ichiro Sakai)	American Honda Motor Co.	X
Mike Rochford (for Reynaldo Agama)	Caterpillar	X
Mike Samulski	U.S. EPA	X
Reuben Sarkar	U.S. Department of Energy	X

Dan Short (for Mike Leister)	Marathon Petroleum	X
Christopher Standlee	Abengoa Energy	X
Christine Tennent	Corning	
John Viera	Ford	
Luke Tonachel (for Roland Hwang)	Natural Resources Defense Council	X
Barry Wallerstein	South Coast Air Quality Management District	
Cynthia Williams	Ford	X

Presenters and Attendees

Name	Organization	Attendance
Julie Becker	Alliance of Automobile Manufacturers	X
Bill Behan	John Deere	X
Chris Bliley	Growth Energy	X
Rasto Brezny	Manufacturers of Emission Controls Association	X
Blair Chikasuye	Hewlett-Packard	X
Gerard Coyle	Evans Delivery	X
John Cruz	Mercedes	X
Pratima Gangopadhyay	Global Automakers	X
Ron Graves	Oak Ridge National Laboratory	X
Steve Vander Griend	Urban Air Initiative	X
Peg Hanna	New Jersey Department of Environmental Protection	X
Rita Hardy	Flint Hills Resources	X
Jeff Hazle	American Fuel and Petrochemical Manufacturers	X
Marilyn Herman	Herman and Associations	X
Tim Hogan	American Fuel and Petrochemical Manufacturers	X
Mike Jackson	Fuel Freedom Foundation	X
Bryan Just	American Petroleum Institute	X
Dale Kardos	DKA Inc.	X

Patrick Kelly	American Petroleum Institute	X
Nancy Kruger	National Association of Clean Air Agencies	X
Anthony Lacey	Inside EPA	X
Joseph Lecht	Volkswagon Group of America	X
Jeremy Martin	Union of Concerned Scientists	X
Mark McCarthy	Toyota	X
Mark Monohon	NGK Spark Plugs	X
Rebecca Monroe	Fiat Chrysler Automobiles	X
Kevin Mundt	Fiat Chrysler Automobiles	X
Anita Rajan	Mitsubishi Motors	X
Derek Regal	Tesoro	X
Karl Simon	U.S. EPA	X
Arman Tanman	U.S. Environmental Protection Agency	X
Gene Tierney	Opus Inspection	X
Marie Valentine	Toyota - TEMA	X
Robin Vercruse	Fuel Freedom Foundation	X
Bill Woebkenberg	Aramco	X

Contractor Support

Name	Organization	Attendance
Lesley Stobert	EC/R Incorporated	X
Alden West	EC/R Incorporated	X