November 13, 2009

Arthur Marin
Executive Director
NESCAUM
89 South Street, Suite 602
Boston, MA 02111

Dear Mr. Marin:

I understand that NESCAUM is in the process of evaluating and designing a low carbon fuel standard for the Northeast and recently held two workshops on a report prepared by NESCCAF titled, "Introducing a Low Carbon Fuel Standard in the Northeast: Technical and Policy Considerations."

While we were unable to attend the two workshops held last month or submit comments by the requested November 10 deadline, we did have some specific concerns about the section on diesel fuel and wanted to provide information to clarify some assertions which are outdated and misleading.

In addition to our detailed comments on the report, I am also including two documents which provide greater explanation and documentation for our comments. The first is a new paper released by the Diesel Technology Forum last month titled, "Black Carbon, Climate Change and Clean Diesel." The second is a Q&A paper titled "Low Carbon Fuel Standards and the Role of Diesel" which was written in response to questions raised during the drafting of California's LCFS. If you have further questions about the performance of light-duty diesel vehicles or the attached comments, please don't hesitate to give me a call.

Thank you for accepting these comments and providing the opportunity to participate in your process for developing a LCFS in the Northeast.

Sincerely yours,

Allen R. Schaeffer
Executive Director

Comments of the Diesel Technology Forum
on
Introducing a Low Carbon Fuel Standard in the Northeast: Technical and Policy Considerations

Background: The Diesel Technology Forum is a not-for profit educational association that represents diesel engine and equipment manufacturers, suppliers, vehicle manufacturers, emissions control technology companies and diesel fuel providers. More information about the DTF is at www.dieselforum.org

Summary:
We have two primary concerns with the NESCAUM proposal to establish an LCFS for the Northeast region, both of which have the effect of severely disadvantaging a key energy efficient technology that is available today:

(1) In pursuit of a low-carbon fuel standard (LCFS) for the northeast, NESCAUM has chosen a faulty approach based on a single fuel baseline that has the effect of disadvantaging diesel technology in light duty vehicles, one of the most fuel efficient and energy saving technologies available today, and effectively removes a key GHG emissions reduction strategy for states in the region.

(2) Concerns of air quality and public health officials regarding emissions impacts from light duty diesel vehicles are unwarranted and ignore the vehicles compliance with applicable federal USEPA and CARB emissions standards.

4.4.3 Diesel

"First, two baselines would create incentives for the development of low carbon fuels suitable for both diesel and gasoline engines.....As already noted, the use of a single baseline that combines diesel and gasoline characteristics creates an incentive for fuel providers to shift production to diesel fuel, which has a lower lifecycle carbon intensity."

According to the report, the impetus for considering a LCFS is to reduce GHG emissions, specifically from the transportation sector by reducing vehicle GHG emissions, vehicle miles traveled (VMT) and changing the properties of transportation fuel. The problem with creating separate baselines for diesel and gasoline is that it disallows any accounting for light-duty diesel's greater inherent efficiency and the benefits of any shift in the passenger car market from gasoline to diesel powered vehicles.

Clean diesel passenger vehicles get up to 40 percent better fuel economy while producing 22 percent less CO_2 per mile than comparable gasoline fueled vehicles, depending on the mix of

vehicles sold and their performance attributes. As a result, if more passenger vehicle buyers chose clean diesel instead of gasoline engines, the result would be millions of gallons less fossil fuel burned and tons less carbon dioxide emitted into the atmosphere. This assertion is supported by a lifecycle analysis of potential fuel mixes by Dr. Alex Farrell and Dr. Dan Sperling in California which found that shifting from gasoline to diesel powertrains in light-duty vehicles would reduce the carbon intensity of the state's fuel, with greater fuel efficiency and a 22 percent reduction in CO_2 emissions.[1]

Unlike other options such as ethanol, natural gas, hydrogen or other alternatives which have been identified as longer term solutions requiring significant investments in fueling infrastructure and vehicle development, clean diesel vehicles and fuels offer a readily available solution which could provide significant benefits over the next 5-10 years as well as progressively greater benefits in the long term through the greater use of biodiesel fuel and the development of diesel-hybrid technology.

"In addition, air quality and public health officials are concerned about the potential for an increase in the number of light-duty diesel vehicles because of health data showing that particulate matter (PM) from diesel vehicles is a carcinogen and can result in significant non-cancer health effects."

This concern is unwarranted and completely ignores current clean diesel technology and emissions compliance and appears to reflect a bias against diesel technology in favor of other technology solutions. Thanks to the nationwide introduction of ultra-low diesel fuel in 2006, which enabled more efficient diesel engines and more effective advanced emissions control technology, the passenger diesel vehicles sold in the U.S. today meet Tier II, Bin 5 emissions levels which were originally required under California's stringent clean air standards. These standards reduce particulate emissions to the same levels or lower than those of gasoline or CNG vehicles, thereby eliminating any cause for concern due to a growth in light duty diesel vehicles.

Clean diesel cars sold in NESCAUM states today (and for the future) must be in compliance with applicable EPA or CARB emissions standards. Beyond that, we urge NESCAUM, to carefully evaluate its formulation of an LCFS that is technology neutral and based on quantitative data and current science rather than qualitative opinions such as "increased health concerns of air quality and public health officials." We urge NESCAUM and its state affiliates to evaluate whether adopting policies and rules like this that can be interpreted as disadvantaging one technology could be viewed as establishing a *de facto* separate emissions standard or rule.

[1] Draft technical analysis: http://www.arb.ca.gov/fuels/lcfs/lcfs_uc_p1.pdf; and draft LCFS policy analysis: http://www.arb.ca.gov/fuels/lcfs/lcfs_uc_pc2.pdf

"Finally, there is significant uncertainty among experts about how potent a greenhouse forcing agent black carbon is. Given this uncertainty, creating an incentive for the introduction of diesel vehicles at this time may not be an appropriate strategy."

This concern is unwarranted and not based on sound science. Any increased use of light duty diesel vehicles will have no impact on global warming due to black carbon thanks to the installation of diesel particulate filters on all of today's clean diesel vehicles to remove black carbon emissions.

In fact, the International Center on Clean Transportation has argued that clean diesel technology's effectiveness in reducing black carbon emissions in U.S. light duty diesel vehicles prevents the erosion of its CO_2 emissions benefits, leaving them with a 17 percent CO_2-equivalent emissions benefit over gasoline powered vehicles.[2] (see attached slides).

[2] Walsh, Michael, Improving New Vehicle Efficiency: Selecting Win-Win Strategies, APEC Workshop on Policies to Promote Energy Efficiency in Transport, Singapore, March 24, 2009.

Climate Change, Black Carbon & Clean Diesel

Over the last few years there has been growing attention to black carbon and its potential impact on global warming. While many claims have been made about black carbon's global warming potential, the U.S. Environmental Protection Agency (EPA) acknowledges that there are a number of uncertainties in determining the net climate effects of black carbon and its co-emission of organic carbon including the location and timing of emissions, their interaction with clouds, their short atmospheric lifetime, changing properties as they mix with other compounds, and uncertain inventory levels.[i]

Diesel vehicles are one of many sources of black carbon emissions; however thanks to recent changes in domestic fuel composition along with advances in engine design and emissions control technology, black carbon emissions have been virtually eliminated from new diesel vehicles and equipment in the U.S. These changes brought a 99 percent reduction in black carbon emissions from heavy duty diesel vehicles just since 2004.[ii] These clean diesel advances have been strongly supported by the International Council on Clean Transportation (ICCT), which is advocating their adoption in countries around the world.[iii]

It is generally acknowledged by U.S. government agencies, international climate organizations and many climate scientists that additional research is needed to fully understand black carbon's role in affecting climate change. Nonetheless, we have compiled several definitions, statistics and facts about black carbon and clean diesel technology in order to promote greater understanding about the subject and the shrinking contribution of U.S. diesel emissions to the global inventory.

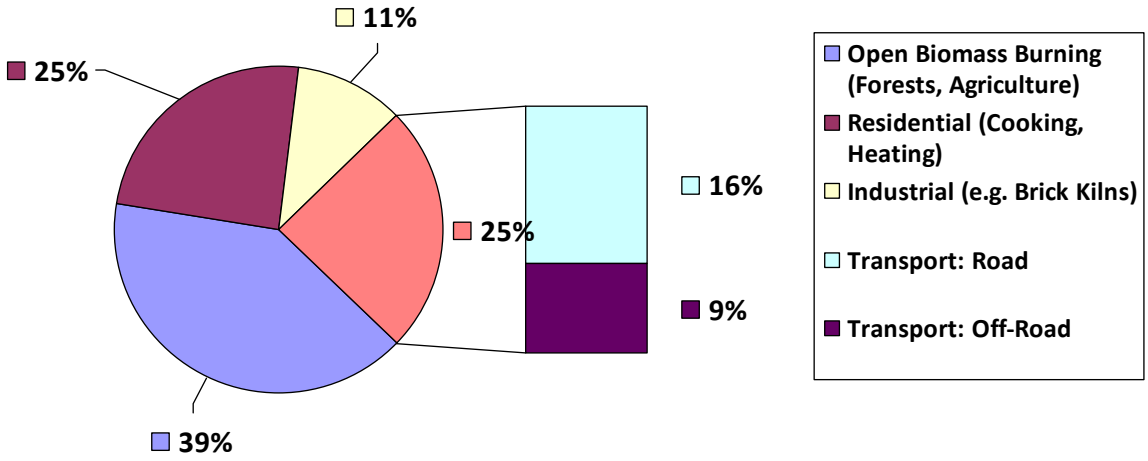
What is black carbon?

Black carbon, often equated with elemental carbon, is a component of particulate matter, or soot, produced from the incomplete combustion of fossil fuel, biofuels and biomass.

What are the primary sources of black carbon?

The main sources of black carbon are open burning of biomass; residential burning of solid fuels such as coal, wood, dung and agricultural residue; fossil fuel combustion for transportation; and industrial activities. Globally, transportation accounts for 25 percent of all black carbon emissions, and diesel engines account for approximately 70 percent of that global 25 percent.[iv]

Figure 1: Global Sources of Black Carbon (*Bond, ICCT Black Carbon Workshop, January 5, 2009)*



What is the geographic distribution of black carbon emissions on a global basis?

East Asia, predominantly China, is the largest aggregate source of global black carbon emissions, with the greatest amount of emissions coming from the residential sector.[v] The U.S. produces approximately 6.1 percent of the world's fossil-fuel and biofuel soot.[vi]

Figure 2: Global Share of Black Carbon Emissions (*Bahner, et al, 2007)*

Africa/Middle East	26%
Developed World (**U.S. – 6%;** EU – 6%; Canada – 1.2%)	22%
China	18%
Latin America (Brazil – 8.5%; Mexico – 1%)	17%
Other Asia (India – 7%; Japan – 2.2%)	12%

What effect is black carbon believed to have on climate change?

Black carbon is thought by many to have a net warming effect on the earth by absorbing light and turning that energy into heat. It also is believed to darken the surfaces of ice and snow when deposited on them, reducing their ability to reflect light while increasing heat absorption and melting.

While black carbon is therefore assumed to exert a heating effect, organic carbon, another component of fossil fuel combustion, is thought to have the opposite, or cooling effect, by reflecting incoming sunlight. Since black carbon is emitted together with organic carbon and small amounts of sulfur and other chemicals, efforts to reduce black carbon emissions will reduce both positive and negative radiative forcing.[vii]

How does black carbon compare to CO_2?

Unlike CO_2 which remains in the atmosphere for decades, black carbon remains in the atmosphere for days or weeks and washes out of the atmosphere within a few thousand kilometers of its emission source.[viii]

Particular concern has been raised about the Arctic, where melting of ice and snow has been accelerated by deposition of wind-blown soot particles. While studies continue to determine the most likely sources affecting the Arctic, the latest research suggests that biomass burning, particularly from Siberia, is the dominant source of black carbon in Arctic snow.[ix,x,xi]

Are U.S. black carbon emissions rising or falling?

U.S. transportation related black carbon emissions are projected to decline by almost 70 percent between 2001 and 2020, contributing to an overall reduction in total U.S. black carbon emissions of 42 percent by 2020.[xii] According to ICCT, North American on-road vehicle emissions will be reduced by 93 percent during this timeframe, accounting for only two percent of global on-road emissions in 2020 (See Figure 3).[xiii]

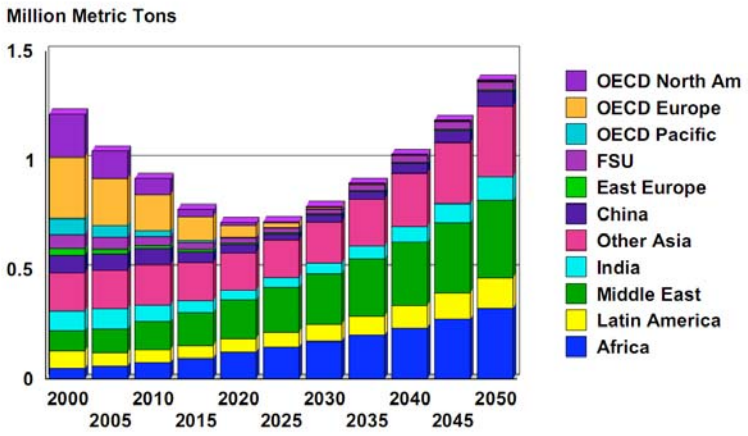


Figure 3: Road Vehicle Black Carbon Emissions by Country *(Walsh, ICCT Black Carbon Workshop, January 5, 2009)*

How does clean diesel technology reduce black carbon?
Thanks to the use of ultra-low sulfur diesel (ULSD) fuel, more efficient engines and more effective emissions control technologies, new U.S. clean diesel trucks and buses have significantly lower particulate matter emissions and 99 percent less black carbon emissions than those manufactured before 2004.[xiv] Today's new diesel cars and trucks all have advanced filters that trap particulate matter.

Over the next several years, the latest clean diesel technology will become standard in many off-road diesel vehicles and equipment such as construction equipment, agricultural vehicles, stationary generators, locomotives and marine vehicles. In addition, many older versions of these vehicles and machines can be retrofitted to trap or reduce particulate matter emissions anywhere from 20-90 percent.

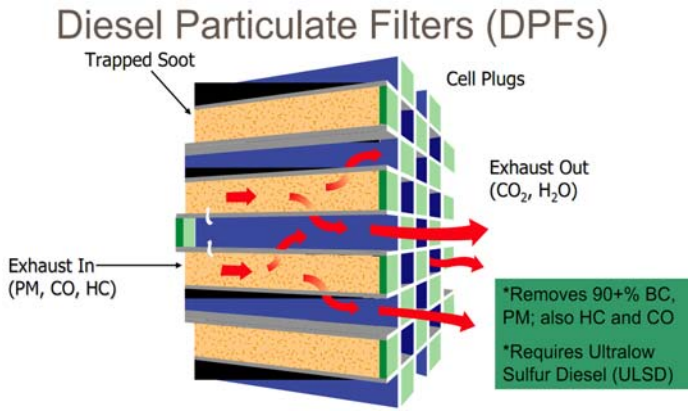


Figure 4: Diesel Particulate Filter *(Walsh, ICCT Black Carbon Workshop, March 6, 2009)*

What has the United States done to reduce its diesel black carbon emissions?
Over the last decade, EPA has promulgated several new emissions standards for diesel fuel and diesel engines. While many, including the introduction of ULSD fuel and the on-highway diesel rule, have already been implemented, others affecting nonroad vehicles, locomotives and marine vessels will be phased in over the next several years.

In addition to regulations for new diesel engines, EPA provides grant funding through the National Clean Diesel Funding Assistance Program to help reduce emissions from existing diesel engines through a variety of strategies. To date EPA has awarded approximately 450 grants for diesel retrofit projects.

Other funds for retrofitting existing diesel vehicles are available through the Federal Highway Administration's Congestion Mitigation and Air Quality program, national and state supplemental environmental projects and several state government sponsored programs.

How do projected U.S. black carbon emissions compare with projected global emissions?
Although global black carbon emissions from all sources are expected to decline between nine and 34 percent from 1996 to 2050, global black carbon from transportation is expected to grow from seven to 77 percent between 2001 and 2020 despite the steep reduction of such emissions in the U.S.[xv,xvi] This is due to the anticipated growth of diesel vehicles in the developing world that do not use ULSD or are not equipped with advanced emissions control technologies.

According to ICCT, when this fuel and filter technology is not used, the CO_2 emissions benefits of light duty diesel vehicles are offset by the black carbon emissions. However when ULSD fuel and diesel particulate filters are used, light duty diesel vehicles have a 17 percent CO_2-equivalent emissions benefit over gasoline powered vehicles.[xvii]

Summary

The introduction of clean ULSD fuel and advanced engine emissions control systems and filters will have dramatically reduced particulate emissions from new diesel engines in all categories by 2014. Today the U.S. is estimated to account for six percent of all black carbon emissions, and is expected to account for only two percent of global on-road vehicle emissions by 2020 as a result of these technology improvements. Modernizing and upgrading existing diesel engines with particulate control technology has proven effective for many applications with the use of ULSD fuel. Expanded use of new generation light duty diesel vehicles with particulate filters provides a 17 percent CO_2 equivalent emissions benefit over gasoline powered vehicles.

For more information visit: www.dieselforum.org www.epa.gov www.theicct.org

October 2009

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[i] Terry Keating, *Black Carbon 101*, U.S. EPA: Office of Air and Radiation, March 6, 2009

[ii] Coordinating Research Council, *Phase I of the Advanced Collaborative Emissions Study*, Alpharetta, GA, June 2009

[iii] *A Policy-Relevant Summary of Black Carbon Climate Science and Appropriate Emissions Control Strategies*, International Council on Clean Transportation (ICCT), June, 2009

[iv] Manufacturers of Emissions Control Technology, http://www.meca.org/cs/root/emission_control_technology/technologies_to_reduce_ghg_emissions

[v] Bahner, Mark A.; Weitz, Keith A.; Zapata, Alexandra, *Black Carbon and Organic Carbon Inventories for Projections and Mitigation Analysis,* RTI International: 16th Annual International Emissions Inventory Conference, Raleigh, NC, May 14-17, 2007

[vi] Ibid

[vii] *A Policy-Relevant Summary of Black Carbon Climate Science and Appropriate Emissions Control Strategies,* ICCT June, 2009

[viii] Ibid

[ix] Tollefson, Jeff, *Climate's Smoky Spectre*, Nature, Vol. 460/2, July 2009

[x] Warren, S. G.; Grenfell, T. C.; Doherty, S. J.; Hegg, D. A.; Clarke, A. D.; Brandt, R. E.; Adames, A. F., *Black Carbon Measurements in Arctic Snow*, American Geophysical Union, Fall Meeting 2008, Abstract #C31F-01

[xi] *Snow Attribution of Black Carbon in Arctic Snow*, Environmental Science & Technology, Vol. 43, No. 11, 2009

[xii] Bahner, Mark A.; Weitz, Keith A.; Zapata, Alexandra, *Black Carbon and Organic Carbon Inventories for Projections and Mitigation Analysis*, RTI International: 16th Annual International Emissions Inventory Conference, Raleigh, NC, May 14-17, 2007

[xiii] Walsh, Michael P., *On and Off Road Policy Strategies*, (ICCT): International Workshop on Black Carbon, London, January 2009

[xiv] Coordinating Research Council, *Phase I of the Advanced Collaborative Emissions Study*, Alpharetta, GA, June 2009

[xv] Bahner, Mark A.; Weitz, Keith A.; Zapata, Alexandra, *Black Carbon and Organic Carbon Inventories for Projections and Mitigation Analysis*, RTI International: 16th Annual International Emissions Inventory Conference, Raleigh, NC, May 14-17, 2007

[xvi] Bahner, Mark, *Use of Black Carbon & Organic Carbon Inventories for Projections and Mitigation Analysis*, RTI International: Presentation, EPA Emissions Inventory Conference, 2007

[xvii] Walsh, Michael, *Improving New Vehicle Efficiency: Selecting Win-Win Strategies,* APEC Workshop on Policies to Promote Energy Efficiency in Transport, Singapore, March 24, 2009

Low Carbon Fuel Standards and the Role of Diesel:
Frequently Asked Questions

March 2008

How exactly does the use of more diesel fuel fit as a low-carbon fuel strategy? What are the other environmental considerations of using more diesel fuel?

In order to facilitate a fact-based discussion on clean diesel vehicles and the impact they could have on a California or national low carbon fuel standard, the Diesel Technology Forum has provided responses to these and other questions frequently asked during discussions on low-carbon fuels:

1. Doesn't greater reliance on diesel run counter to the intentions of the LCFS – to move away from petroleum fuels?

- In California, CARB adopted the LCFS as a Discrete Early Action that is intended to provide both short-term and long-term reductions in the carbon content of transportation fuels. By using more light-duty diesel vehicles, Californians will benefit immediately from the inherent 22 percent carbon reduction per mile gained by more energy efficient diesel powertrains.
- Expanded use of clean diesel passenger vehicles could significantly increase the market for advanced renewable diesel fuels, further reducing transportation related CO_2 emissions.
- California Energy Commission (CEC) has estimated that if light duty vehicles were 10% of the 2020 fleet, carbon intensity of the fuel pool could be reduced by 2 million metric tons which is equivalent to avoiding the burning of 175 million gallons of gasoline, or removing 250,000 gasoline vehicles from the road.[1]

2. Isn't it true that greater reliance on diesel fuel will increase emissions other than CO_2 and magnify the problems caused by emissions from heavy-duty diesel vehicles?

- Not according to California Air Resources Board (or other credible source) testing. New clean diesels now comply with California's stringent clean air standards. In other words, using more clean diesel cars does not mean sacrificing environmental quality. New clean diesels use advanced emissions controls and particulate filters – making them able to pass California's stringent smog standards.
- Today's ultra-low sulfur diesel (ULSD) fuel has 97% less sulfur, which reduces particulate matter (PM) emissions in all diesel vehicles that use it. Most importantly, ULSD enables the use of advanced emissions control technology such as PM filters, oxidation catalysts and NOx after-treatment devices that help new clean diesel cars meet the same

[1] CEC's AB 1007 Alternative Fuel Plan Renewable Diesel Storyline – www.energy.ca.gov.

emissions standards as gasoline vehicles. All new vehicles, regardless of fuel type, must meet Ultra Low Emission Vehicle (ULEV) standards.

- Clean, quiet and fuel efficient light-duty diesel vehicles comprise more than 50% of the passenger vehicle market in Europe and have been key to the European Union's CO_2 reduction strategy. According to the European Environmental Agency, "The main reasons for the (CO_2) reductions since 1995 are fuel efficiency improvements, mainly in diesel-fueled vehicles, and a shift in fleet composition from petrol to diesel passenger cars."[2]

3. What about the effects of ultra fine (sub-2.5 PM) particle emissions from diesel engines?

- Ultra fine particles are emitted by all internal combustion engines – including gasoline-electric hybrids and CNG vehicles – and are not specifically regulated.
- Diesel emissions control systems used by new clean diesel vehicles meeting California's stricter emissions standards reduce particulate emissions to the same levels or lower than those of gasoline or CNG vehicles.
- The emissions control systems in light-duty diesel vehicles <u>are robust</u> – they must be effective for 120,000 miles or more, the same as gasoline vehicle emissions control systems.

4: Isn't it true that increased reliance on clean diesel vehicles is just a short-term solution, and does not advance vehicle technology?

- Near term advanced solutions are critical to the success of the LCFS, and clean diesel vehicle technology *is* a near term advanced technology, which offers the same or better fuel efficiency than comparable hybrid-electric vehicles.
- Diesel hybridization (currently used in buses and medium- and heavy-duty trucks) is an example of diesel technology advances that contribute to high-tech, long-term solutions.
- Introduction of light duty diesel will encourage the development of more efficient gasoline and other alternatively powered vehicles to compete with them. This competition between technologies will bring benefits that can be shared or adapted by all of them.

5. Isn't it true that greater reliance on diesel vehicles will contribute to global warming because of increased black carbon emissions?

- Any increased use of light duty diesel vehicles will have <u>*no*</u> impact on global warming due to black carbon. All new diesel engines for highway vehicles will utilize particulate traps which remove black carbon emissions. The majority of new off-road machines will have the same technology by 2012.
- Black carbon emissions of existing engines are *decreasing* as a result of diesel retrofit technology now in place on thousands of engines across the country.

[2] Greenhouse gas emissions trends and projections in Europe 2006," European Environment Agency, September 2006:47.

- Diesel particulate filters (DPFs) eliminate black carbon emissions from diesel vehicles at efficiencies greater than 99 percent[3].

6. What is the impact of increased diesel fuel use on low-income residents who live near refineries and transportation corridors?

- The impact to low-income communities would be no greater than at present since there would be no net increase in the volume of transportation fuel produced at refineries - which would likely just shift production from gasoline to diesel to meet demand. This could be expected to reduce overall refinery emissions since many refiners currently expend energy to further refine diesel into gasoline.
- There would be no net increase in tailpipe emissions, since all new light-duty diesel vehicles must meet the same strict California emissions regulations.

7. Aren't light-duty diesel emissions higher than those of comparable gasoline or other alternative fuel vehicles – even if they are regulated to the same emission certification standard?

- CARB and EPA determine the health-based emissions standards for motor vehicles. Any vehicle that earns certification has met the relevant government standard.
- All vehicle manufacturers try to build a "cushion" into the certification process so that actual emissions level variations, which are now extremely small, may vary while still being under the certified level.

8. Won't reliance on more diesel vehicles deter the development of advanced bio-fuels and renewable fuels?

- Since a majority of diesel vehicles are capable of running on bio-fuels, the introduction of more light-duty diesel vehicles could *increase* the use of bio-fuels, especially as second generation renewable diesel fuel, which can use existing fuel transportation infrastructure, becomes available.
- Although diesel powered vehicles could play an important part in meeting the California's GHG goals, the use of diesel and advanced renewable diesel fuels alone will fall short of the state's goals, maintaining the need for continued fuels and engine development.

9. Isn't it true that the LCFS cannot accommodate a credit for increased light duty diesel vehicle use because of the difficulty in tracking and validating such a credit?

- If CARB will allow utilities to claim carbon reduction credits for transportation – and differentiate electricity used for such purposes – a "fuel-neutral" policy approach would dictate that a regulatory framework can and should be developed to identify heavy-duty vs. light-duty use of diesel fuel. Both California-registered vehicles and out-of-state

[3] AVECC 2001 , Dr. Thierry Secuelong, Referring to a Corning Trap Efficiency evaluated under the VERY Program, http://www.meca.org/galleries/default-file/Seguelong-rev.pdf

commercial vehicles already report fuel consumption indirectly through payment of highway use taxes and vehicle miles traveled (VMT).

- Department of Motor Vehicle registration databases could be tapped to determine the level of diesel fuel used based on the number of registered vehicles, EPA fuel economy ratings, and estimated VMT (VIN x mpg x VMT). Similar computer modeling is done to calculate cumulative tailpipe emissions.

10. Wouldn't a shift to more diesel in the fuel mix allow refiners to comply with the LCFS, but conflict with vehicle manufacturers' planned compliance with AB 1493/EPA CAFE standards?

- The main thrust of both AB 1493 and the new CAFE standard is to increase fuel economy. Clean diesel vehicles do exactly that with up to 40 percent better fuel economy than today's conventional gasoline powered cars. There is no downside to the increased fuel economy and the reduced CO_2 per mile that comes from a shift to more light-duty diesel vehicles. The use of petroleum fuel will be reduced and the overall carbon content of transportation fuel will be reduced. Overall greenhouse gases from transportation use will be reduced as well.

11. Aren't alternative fuels lower in CO_2 emissions than diesel?

- The lifecycle analysis of the LCFS team shows that diesel is comparable to many of the so-called alternative fuels. In addition, biodiesel and renewable diesel lower the carbon content of the fuel even further.

12. Shouldn't we be shifting from liquid fuels to the use of gaseous alternative fuels to pave the way for the eventual use of hydrogen-powered fuel cells that have no direct CO_2 emissions?

- While fuels like CNG have similar gaseous fuel properties to hydrogen, there is a very limited infrastructure to dispense the fuel and only small test fleets of passenger vehicles designed to use it. A shift to gaseous fuels, like hydrogen presumes significant changes in both the vehicle fleet mix and infrastructure, and according to the National Academy of Science, is not expected to be viable for several decades[4]. Very little within the existing CNG refueling stations could even be used for hydrogen refueling. Increased use of diesel in passenger cars allows the use of existing infrastructure to achieve immediate CO_2 reduction.

For more information visit www.dieselforum.org

[4] National Academy of Science- National Research Council Preliminary Assessment letter to Hon. Nicole Nason, Administrator, NHTSA; February 14, 2008.