DIESEL TECHNOLOGY FORUM

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RE: Comments on the Public Review Draft of the "Vision for Clean Air: A Framework for Air Quality and Climate Planning"

Dear Mr. Karperos and Mr. Cunningham:

On behalf of the Diesel Technology Forum, I submit these comments regarding the Public Review Draft of "Vision for Clean Air: A Framework for Air Quality and Climate Planning" ("Vision") released on June 27, 2012, for public comment. The document lays out multiple strategies—technology, energy and efficiency-- to meet 2032 air quality and 2050 greenhouse gas reduction goals. We offer views on the Vision's assessment and bring to your attention important recent advances made in diesel engine and emission technologies, because they are directly relevant to the achievement of these goals.

The Diesel Technology Forum represents manufacturers of diesel engines, components, emission control devices and producers of ultra-low sulfur and bio-based diesel fuels. DTF members are committed to advancing state-of-the-art diesel equipment to reduce smog-forming pollutants and greenhouse gases while greatly improving fuel economy--exactly the targets of your "Vision" for improved air quality in California.

SUMMARY

As currently presented, the Vision's utility and value is substantially diminished for two major reasons. First, the Vision does not provide a rational view of the spectrum of technologies likely to be in use in key sectors of California's Economy in the 2031 to 2050 timeframe. It suggests a far greater reliance on the success of unknown or emerging technologies, which by many independent measures are said to be unlikely to be predominant fuels or technologies in the timeframe of the Vision. Numerous federal reports as well as those from academic institutions and National Academy of Science panels suggest that Internal Combustion Engines powered by gasoline or diesel will still be the predominant technologies in place during this time.

Second, the Vision fails to fully consider and accurately anticipate future benefits from continuous improvement and gains from existing ICE technologies like clean diesel, particularly when matched with hybrid powertrains and biofuels. ICE technology improvements from clean

diesel will deliver significant benefits toward clean air and reduced GHG emissions, because of their dominance in key sectors of the economy.

We are concerned that the technology scenarios outlined in the "Vision for Clean Air" significantly understate anticipated advances in clean diesel technologies, including cleaner fuels (such as those that will result from a successful implementation of a Low Carbon Fuel Standard) and new engine and emission control technologies.

Diesel Technology Forum members continue to invest significant resources to improve efficiency while maintaining near-zero emissions. We ask you to recognize the role that increasing fuel efficiency will have in reducing greenhouse gas emissions from the heavy-duty truck segment alone. Also, many of our members are investing in new engine technologies capable of operating on higher biofuel blends which, on a life-cycle basis, will also contribute to greenhouse gas reductions into the future. Technological advances that improve efficiency and reduce emissions take time to develop and require significant resources to bring to market. Further efficiency and emissions requirements may impose additional costs that may not justify the additional air quality benefits without providing alternative powertrain options for equipment users.

Based on two years of review and analysis by more than 300 participants from diverse perspectives, the prestigious National Petroleum Council issued a report titled 'Advancing Technology for America's Transportation Future' (August 2012). The report analyzed among other things the potential for changeover in powertrains in the heavy-duty truck segment to alternative sources of fuel. The report concluded that …

> "diesel engines will remain the predominant powertrain for heavy-duty vehicles over the coming decades due to the technology's power, efficiency and cost." The report highlighted technological improvements that will yield significant fuel efficiency, possibly doubling fuel economy in the Class 7 and 8 truck segments.
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> "Vehicles powered by petroleum and internal combustion engines – the foundation of travel for over a century – continue to become more efficient and cleaner. They now run on petroleum blended with biofuels, some of their engines are assisted by electric motors, and they are being joined on the nation's roadways by vehicles running on natural gas, electricity, and hydrogen.
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> Profound changes <u>are possible</u> with disruptive, <u>yet highly uncertain</u>, innovations such as ultra-light-weight vehicle materials; new electric vehicle battery technologies; low-cost, low-pressure storage for natural gas or hydrogen; or breakthroughs yielding lower cost, low carbon transportation fuel.
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> "Yet <u>despite sustained investment in technology and infrastructure, these fuel and vehicle advances</u> <u>are not assured</u>. There are competing priorities in the pursuit of new fuel and vehicle technologies that are at once reliable, affordable, and environmentally responsible. Striking a balance that meets individual and societal goals is the challenge at hand for both industry and government.[1]

[1]National Petroleum Council Future Transportation Fuels Study: Advancing Technology for America's Transportation Future. August 1, 2012. http://www.npc.org/FTF-80112.html

IMPORTANCE OF DIESEL TO CALIFORNIA's ECONOMY

Diesel technology is a critical component in California's economy, providing the backbone of goods movement and an increasing role in personal transportation as consumers turn to more fuel-efficient technologies, on the order of $13 Billion annually[2].The enormous achievements made by diesel technology in reducing emissions and increasing fuel efficiency cannot be overstated.

At the same time it is important to note that investments and innovations that have led to these results are ongoing; with greater investments centered on the diesel engine, vehicle and machine to further reduce emissions and fuel consumption, to meet critical customer demands as well as societal objectives.

Clean diesel technologies have greatly advanced during the previous 10 years with the results visible today:

1. On-road diesel truck engines have near zero emissions of particulate matter and oxides of nitrogen (NOx), representing a 98 percent reduction compared to 1988 model year engines.
2. New 2010 EPA emissions-compliant clean diesel heavy-duty trucks consume on average of 1,250 less gallons of fuel each year compared to the previous generation of trucks, resulting in 14 fewer tons of CO2. Conservative estimates predict that 225,000 model year 2010 truck sold over a five period would result in roughly 3.5 billion gallons of fuel saved and 40 million tons of CO2 reduced.
3. New diesel light-duty vehicles also achieve emission reductions and improved fuel economy even greater than those of heavy-duty trucks.
4. Similar impressive advances for the off-road sector of diesel engines are currently being developed for engines found in everything from small construction equipment and farm machinery to freight locomotives, marine vessels, work boats and very large off-road machines and mining equipment.

In fact, advances in clean diesel technologies have been so successful in achieving near-zero emissions of fine particulate matter that today's diesel engines and equipment are a small and declining portion of the emissions inventory and currently rank as the 8th and 9th on the top 10 contributors to particulate matter, according to California Air Resources Board data. As you know, the overall incidence of PM in California has continued to decline, owing to these improvements within the transportation sector.

We would suggest that future scenarios more robustly reflect these expected advances, particularly given the significance of diesel power to key sectors of the California economy. We also suggest that you more carefully present the technology options for improving diesel engines. For example on Page 7, Paragraph 5 of the Vision under Hybrid Electric Vehicles, in your description and references you made reference to gasoline engines using more hybrids, but do not make note that hybridization is also completely feasible and likely for diesel engines as well. For example, Volkswagen and Volvo currently offer diesel electric hybrid vehicles for sale outside the US. A hybrid diesel car is likely to provide greater efficiency gains than a gasoline hybrid car and lower CO2 as well.

To provide immediate improvement in emissions from legacy engines, we endorse your call for renewal of existing retrofit incentives, including the very successful Carl Moyer Program.

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[2] Diesel Technology and the California Economy, 2004. By the Aspen Environmental Group and M-Cubed for the Diesel Technology Forum accessed at http://www.dieselforum.org/files/dmfile/DieselTechnologyandtheCaliforniaEconomy.pdf

We are confident that advances in engine technologies, fuels standards and emission control technologies will greatly reduce smog forming pollutants and greenhouse gases from diesel engines. In so doing, diesel technology will contribute to California's economic growth, while helping the South Coast and San Joaquin Valley to achieve their air quality goals and the state's greenhouse gas-reduction targets.

We look forward to working the California Air Resources Board and other air districts and the citizens of California to meet future energy, climate and environmental goals. Clean diesel has been a substantial part of the California environmental success story in the last ten years and we are confident it has an even greater role to play in the next 20 years.

Thank you,

Allen Schaeffer
Executive Director