



Driving Sustainability with Clean Fuels and Advanced Vehicles

Submitted Comments by:

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On Behalf of the:

Connecticut Clean Cities Coalitions

Governor's Council on Climate Change (GC3) Meeting

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1:00 PM – 3:00 PM

Connecticut Department of Energy and Environmental Protection

Gina McCarthy Auditorium

5th Floor 79 Elm Street Hartford, Connecticut

September 24th, 2016

Dear Council Members:

Thank you for the opportunity to comment on the presentation, specifically the slides titled Heavy Duty Vehicle Electrification and Electrification of Passenger and Freight Rail (slides 13 and 14, September 8th, 2016 GC3 Presentation). During various presentations, assumptions have been made about light-, medium-, and heavy-duty vehicles. The idea that light- through heavy-duty trucks will be powered by zero emission technology at the 80% to 90% level has no basis in reality. We currently do not have any known vehicles or technology that will move light- through heavy-duty trucks the distance between fueling requirements. This type of technology may exist at some level in the coming years, but based on our experience we do not believe that it will reach the 80% to 90% level by 2050.

We do agree that in the light- to medium-duty truck segment some zero emission powertrains will be developed and integrated into the commercial vehicle availability possibly by 2050. In the case of heavy-duty vehicles there may be 20% heavy-duty powertrains on the road operating on zero emission technology. In the case of light- to medium-duty there may be a 30% availability of zero emission required powertrains from this weight group. At this time, it is only speculation what the future will hold, because the technology has not been developed, much less

deployed. There is testing going on using hydrogen, hydrogen hybrid, electric, hybrid electric and all electric powertrains to power vehicles up to the Class 8 size, but these are all science projects that involve very expensive technologies.

We believe that fossil fuels will be the main fuel that has the energy capable to power most commercial freight trucks. Gaseous fuels such as natural gas and propane/autogas can be used to decrease greenhouse gas (GHG) emissions and criteria pollutants in Connecticut *right now*. Natural gas and propane/autogas vehicles can reduce GHG emissions up to 30%, reduce nitrogen oxide (NOx) emissions up to 95%, decrease carbon dioxide (CO₂) by as much as 30%, decrease carbon monoxide (CO) by 85% and carcinogenic particulate matter (PM) by 90%. These reductions are a huge health benefit to the citizens of Connecticut. Today we have alternative fueled vehicles with proven track records for all vehicles: light-, medium-, and heavy-duty with infrastructure already available across the state to the public and at municipalities. In Greater Hartford, Southwest CT, Norwich and New Haven areas, there are hundreds of vehicles that have been on the road for several years fueled by compressed natural gas (CNG), liquefied natural gas (LNG), and propane/autogas. Current users such as municipalities, MDC, Triple AAA, cab companies, transit agencies, private fleets, UPS, Verizon, and AT&T use vehicles such as trash trucks, recycling trucks, shuttle vans, taxi cabs, school buses, vans, pick-up trucks, and light-duty passenger cars. And this technology has already advanced and has been on the road for the last few years.

There are near zero emission CNG and LNG engines being developed and deployed as early as next year that can be used in medium- to heavy-duty vehicles. The natural gas engine manufactures believe these engines will be cleaner than some electric vehicles, when you factor in the electricity being produced at a natural gas power plant and other types of power plants. In the case of natural gas refuse trucks and concrete mixers, more fleets are turning to natural gas operated powertrains. In the long haul freight sector Class 8 trucks are achieving ranges of over 1,000 miles on a single fueling. In addition, these type vehicles are starting to appear on major corridors coming from southern and western states. Recently the Greater New Haven Clean Cities Coalition was asked about CNG fueling stations by a transportation company operating Class 8 long haul trucks from Alabama to the northeast including Connecticut, which the coalition helped, establish. UPS has a large LNG powered freight truck fleet operating in the southern, mid-western, and western states. And they are expanding soon to the eastern US. The CNG and LNG technology is also successfully being applied to rail and marine applications.

In addition, propane engines are increasing in availability with increasingly cleaner and more efficient technologies. Propane/autogas is mostly derived from natural gas but has a much simpler and less expensive infrastructure and fuel cost than natural gas. Connecticut school boards are recognizing the benefits of propane/autogas, and the number of propane buses is increasing. Certain Connecticut school districts will have replaced nearly 175 diesel school buses

with propane/autogas powered buses by the end of 2016 aside from the fleets already using these buses. The efficiency of the new direct inject propane/autogas powertrains has spread into the medium-duty truck arena, and appears to be moving into the Class 8 truck powertrains systems.

With the existing CNG, LNG, propane/autogas and associated hybridization powertrains on the road and the GC3's premise to ignore the efficient, clean and cost efficient system for a technology that does not exist will only leave the public with these options going forward. We believe that the existing clean vehicle technologies will offset a large amount of the 8% GHG wedge (Slide 13). To ignore the obvious lack of zero emission technology to reduce GHG emissions and related criteria emission does not make sense, when there is technology regardless of what the GC3 study presents. In fact it invalidates a major part of the GC3 plan.

Let's not overlook what is available today in other clean fuels that can provide 20-30% less GHG emission and huge health benefits while lowering our dependence on imported oil with American fuels.

In 2015, the Connecticut Clean Cities Coalitions helped stakeholders avoid 30,096 tons of GHG emissions by moving away from petroleum fuel. We encourage the council to include these fuels and incentives for these fuels/infrastructure to help meet the goals the governor has set.

Sincerely,

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