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Z-Best Composting

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Napa Recycling Compost
Northern Recycling Compost
Quackenbush Mt. Composting
Sonoma Compost
Tracy Delta Compost
Upper Valley Recycling
Zanker
Z-Best Compost Facility

1822 21st Street
Sacramento, CA 95811

Phone: (916) 739-1200
Fax: (916) 739-1216

Email:
neil@californiacompostcoalition.org

Website:
www.californiacompostcoalition.org

August 7, 2015

The Honorable Mary Nichols, Chair
The Honorable Richard Corey, Executive Officer
California Air Resources Board
1101 "I" Street
Sacramento, CA 95804

Re: Comments on 50 Percent Petroleum Reduction Strategy

Dear Chair Nichols and Executive Officer Corey:

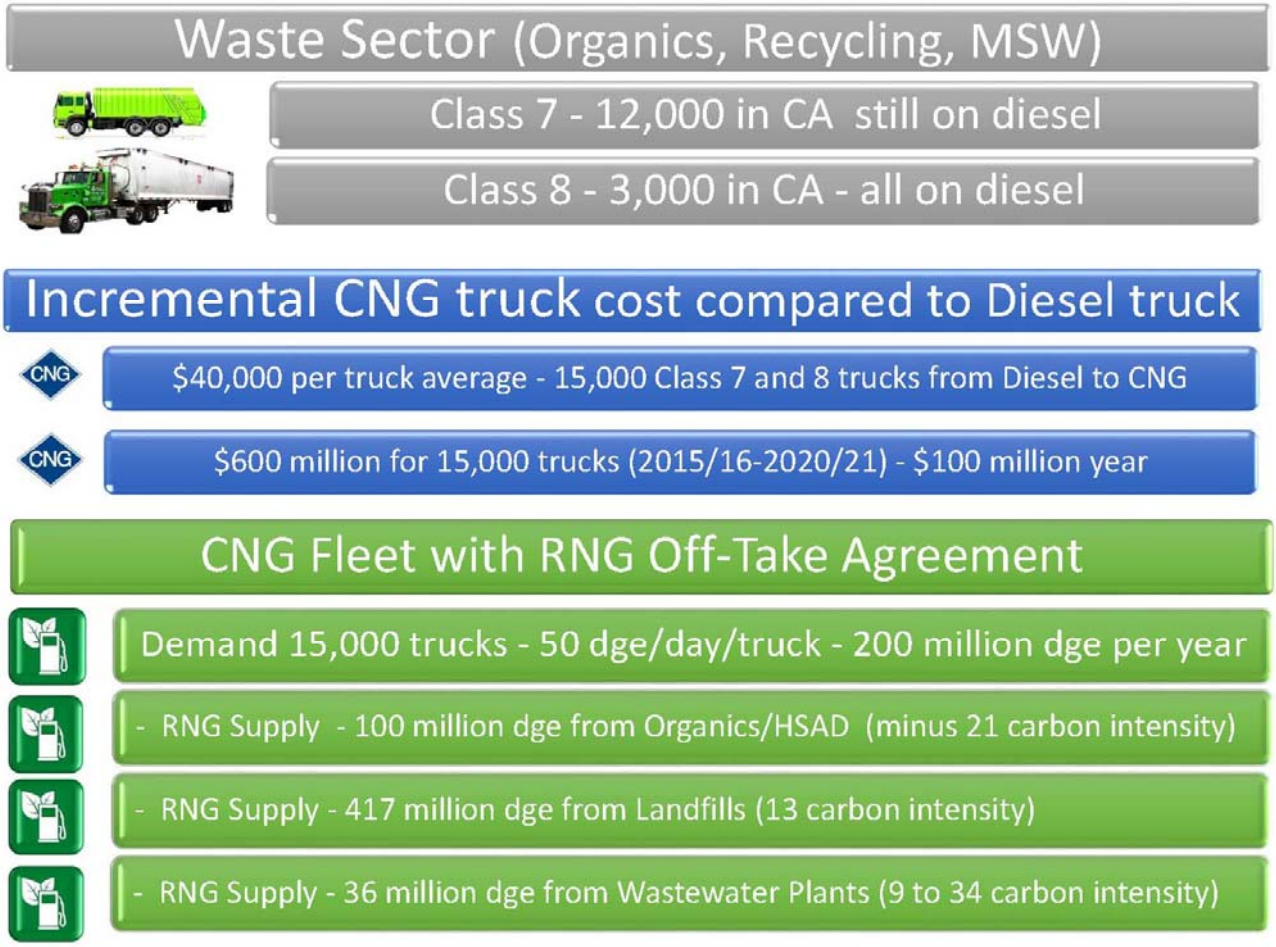
The California Compost Coalition (CCC) strongly supports the Administration's goal of 50 percent petroleum reduction and welcomes the opportunity to submit comments on how to achieve that goal. CCC is a statewide organization representing haulers and processors of organic waste, including anaerobic digestion facility operators who produce renewable compressed natural gas (RNG). CCC members operate a fleet of hundreds of heavy-duty collection vehicles, and are transitioning from diesel to lower carbon compressed natural gas (CNG) fuel, with plans to make our own carbon-negative RNG fuel with the organic waste we collect using anaerobic digestion technologies.

The true power of diverting organics from landfills lies in the conversion of food waste and green waste into RNG. A 25,000 ton per year Anaerobic Digestion-to-Renewable Compressed Natural Gas (AD-to-RNG) project can be designed without a pipeline, and the associated leakage, as a community-scale model serving a population of approximately 100,000 people. This model can collect commercial food waste from all accounts and achieve a zero waste goal while deploying a carbon-negative fleet. The co-location of this AD-to-RNG facility where a fleet is parked is a natural fit: combining RNG fuel demand on-site with 328,000 diesel gallon equivalents (dge) per year of RNG production (with a carbon intensity of negative 31 g CO2e/MJ), servicing a fleet of 35 heavy-duty trucks. The solid waste and recycling sub-sector which is already committed to CNG trucks will be able to make its own RNG. We are also electrifying our diesel off-road stationary equipment to assist in reducing petroleum use.

As part of the AB 32 Scoping Plan First Update recently adopted by CARB, it is estimated that 5.0 million to 7.5 million ton of food waste and green waste should be diverted by 2020 with half going to composting and half going to anaerobic digestion (AD); this volume of feedstocks is sufficient for 100 to 150 of these AD facilities to be built by 2020, producing between 33 million to 50 million dge annually.

California Energy Commission prepared a Technology Assessment in 2014 which states that today's potential supply of biomass resources from the urban, agricultural, and forestry sectors could produce 2.2 billion gallons per year of fuel, where 24.7 billion gallons is projected to be used in 2014. Of the 2.2 billion gallons, UC Davis analysts determined that 113 million gallons per year could be derived from food waste, diverting 1.2 million bone dry tons of food waste.

The solid waste and recycling industry fleet, comprised of 15,000 heavy-duty vehicles, uses about 150 million gallons per year of fuel. The Edgar Institute has projected that 80% of the industry's heavy-duty fleet will be CNG by 2020, where 12,000 vehicles will be able to substitute 120 million gallons of diesel fuel with an equivalent amount of RNG.



The solid waste and recycling collection industry has invested in a multi-billion dollar process of transitioning from diesel to CNG, including the potentially brighter future of making our own RNG from food waste to fuel carbon-negative fleets; the CARB Technology Assessment needs to fully understand this: while the projected electrification of our fleet would lower the carbon intensity by approximately 60% below diesel, it is a far cry from the reductions achieved by a verified, carbon-negative fleet using RNG.

To maximize the benefits and achieve the 50 percent petroleum reduction in the most cost-effective manner, California must invest in a variety of fuels and technologies across all vehicle types and transportation sectors, including RNG and not just fund ZEVs. This includes investments to the CNG fleet that uses a RNG fuel for the vehicles that collect and haul the organic wastes and run on those fuels. With an average incremental costs of $40,000 to purchase a Class 7 and Class 8 vehicle, the conversion of the diesel fleet to CNG could cost up to $600 million. CARB should promote the conversion of the CNG to get off diesel, where the CNG vehicle has a RNG agreement in place to fuel that CNG vehicle. That could cost up to $100 million per year for the next 6 years.

Promoting the development and use of biogas to reduce petroleum consumption will immediately begin to reduce the most significant sources of Short-Lived Climate Pollutants and toxic air contaminants, providing immediate public health and climate change benefits to the state. Biogas also provides many times more jobs than fossil fuels and those jobs can be located in every community in the state.

Using organic waste, California can generate more than 2 billion gasoline gallon equivalents of biogas, enough to replace nearly two-thirds of all the diesel used by motor vehicles in California.[1] The petroleum reduction, public health and economic benefits would be enormous. Increasing biogas use as a transportation fuel is essential to achieving a 50 percent petroleum reduction goal and other important policies, but numerous regulatory and financial barriers must be addressed to achieve biogas' potential. The most important changes are described below, echoing the Bioenergy Association of California

Low Carbon Transportation Incentives Must be Performance Based and Directed to All Vehicles Types.

The Air Board's fact sheet on 50 percent petroleum reduction makes it very clear that biofuels are an important part of the petroleum reduction strategy. Yet none of the current year's Low Carbon Transportation funding went to biofuels production and deployment. This is particularly surprising since biogas made from organic waste is the single lowest carbon fuel available, and is carbon negative from high-solid anaerobic digestion facilities.

[1] "Decarbonizing the Gas Sector: Why California Needs a Renewable Gas Standard," November 2014. Available at: http://www.bioenergyca.org/news/bac/bac-releases-groundbreaking-report-on-renewable-gas/.

Going forward, it is critical that Low Carbon Transportation funding be used to incentivize the CNG fleet and the range of fuels needed to meet the Low Carbon Fuel Standard and the 50 percent petroleum reduction goal. Funding only electric and fuel cell vehicles – not including the renewable hydrogen to power the fuel cells – will not get California to its petroleum reduction goals, nor help the state to reduce Short-Lived Climate Pollutants, divert organic waste or achieve other important strategies to address climate change.

CCC support all of the BAC recommendations that Low Carbon Transportation Funding:

- Be based on performance criteria for each vehicle sector and class, rather than picking technology winners that are only available for some vehicle classes and uses
- Incentivize a mix of technologies and fuels that can provide immediate reductions in greenhouse gas emissions, especially fuels that can reduce Short-Lived Climate Pollutants, which is the only way to immediately slow global warming[2] while providing immediate and significant public health benefits
- Rank greenhouse gas reductions as the most important performance criteria since AB 32 requires that Cap & Trade funding achieve "the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions"[3]
- Make performance criteria and rankings transparent to ensure that funding achieves the maximum greenhouse gas reductions while achieving other co-benefits
- Distinguish between "zero emission" for criteria pollutants and "zero emission" for greenhouse gases and Short-Lived Climate pollutants, when using Cap & Trade Funding, which must maximize greenhouse gas reductions

Incentivize Fuels that Help Meet the 5 Pillars of California's Climate Change Strategy.

In order to maximize the greenhouse gas reductions and other benefits of a 50 percent petroleum reduction goal, funding and other incentives should prioritize those fuels and strategies that not just reduce petroleum consumption, but help achieve complementary climate policies such as organic waste diversion, wildfire reduction, carbon sequestration and reduction in Short-Lived Climate Pollutants. We urge the Air Board and other agencies to prioritize those fuels and technologies that can help achieve multiple climate strategies to ensure maximum greenhouse gas reductions and other benefits.

As noted above, converting organic waste to fuels, renewable electricity for electric vehicle charging and renewable hydrogen for fuel cells can help not only to reduce petroleum consumption, but help to achieve multiple climate pillars:

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[2] ARB Concept Paper on Strategies to Reduce Short-Lived Climate Pollutants at page 1. Available at: http://www.arb.ca.gov/cc/shortlived/concept_paper.pdf.

[3] AB 32 (Pavley, 2006), Health and Safety Code section 38562(c).

- 50 percent renewable electricity
- Organic waste diversion
- Carbon sequestration and restoration in California lands
- Short-Lived Climate Pollutants

Accelerate Certification of Low-NO_x Engines and Incentivize their Deployment.

Engine technologies are developing quickly and moving toward power-plant level NO_x emissions, equivalent to the criteria pollutant emissions of electric vehicles and providing even greater greenhouse gas and SLCP reductions. Given the urgency and opportunity to reduce SLCP's, we urge the Air Board to accelerate the certification and deployment of these ultra-low NO_x engines.

Biofuels are critical to achieve a 50 percent petroleum reduction and to immediately reduce emissions from Class 7 and Class 8 heavy duty vehicles. The changes described above are critical to significantly increase the development and use of biogas as a transportation fuel. We look forward to working with the Air Board and other agencies to remove these barriers to instate biogas development in order to maximize petroleum reduction, greenhouse gas reductions and other benefits that transportation fuels from organic waste can provide.

The solid waste and recycling sector heavy-duty fleet is in the midst of a multi-billion switch from diesel to alternative fuels (CNG), where up about 80% of the fleet will be CNG by 2020. The solid waste and recycling industry is co-locating CNG fueling stations at their facilities that may or may not be publically accessible. ARB staff should also present the number of private CNG facilities (to complement slide 117 of your presentation) which shows that there are 490 publicly-accessible CNG fueling stations. There is a robust, and growing, network of privately available CNG fueling stations for private sector fleets.

RNG does not need to be placed in a pipeline, but can used at the point of generation to fuel a captive fleet. The AD-to-RNG project can be designed without a pipeline and the associated leakage as a community-scale model. This model can collect commercial food waste feedstocks and achieve a zero waste goal while deploying a carbon-negative fleet. The co-location of this AD-to-RNG facility where the fleet is parked is a natural fit by having fueling stations co-located where biomethane is generated to limit transmission losses and infrastructure costs. RNG fueling stations may be time-filled or fast-filled for quick refueling.

Should you have any questions, please contact me at (916) 739-1200.

Sincerely,

Evan Edgar
Regulatory Affairs Engineer

cc: The Honorable Cliff Rechtschaffen, Senior Advisor to Governor Brown
The Honorable Ashley Conrad-Saydah, Deputy Secretary, CalEPA