

Online Docket: due 1-7-22

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ws%20&comm_period=1](https://www.arb.ca.gov/lispub/comm/bccommlog.php?listname=lcfs-workshp-dec21-ws%20&comm_period=1)

Below are comments from *GreenPower Motor Company* and we appreciate CARB's interest in future changes; however, action must be immediate.

MHD Infrastructure Crediting Application:

The proposal currently only recommends Hydrogen. This is not adequate and is not moving us forward to N-79-20. The reasoning per CARB was that they had mainly only heard from the Hydrogen technology group on this need. This does not justify what is necessary in the field to meet and support the requirements of the mandate.

This needs to support and align the MHD fleet operators' needs and to continue to develop an ecosystem. The EV Medium-Duty sector and vehicles can immediately perform the fleet route and jobs. As such, we need to continue to meet the needs of the small size fleets, private, and independent drivers whereby infrastructure to support them is critical. Truck and Bus Dealerships and Garage Services and support centers can do this and it makes practical sense to have an application for MHD on both ZEV technologies including EV Fast Charging.

We recommend the following modification and to include EV MHD Charging Infrastructure applications. Consideration to include EV MHD infrastructure for the EV MHD vehicle deployment goal needs to anticipate the scaling needs and accessibility for these larger vehicles with larger battery packs. It is critical to align with the CI targets and ZEV MHD mandates with EV Charging station locations and immediately. For example, MHD commercial enterprise dealerships have an interest and have the opportunity to improve their business model as they face implementing a program to support EV technology. They depend on parts and services as their main revenue source and they have locations that could bundle programs to include charging as they tend to be located in urban and densely populated hub areas and already



implement a program to support customers with MHD buses and trucks. Additionally, these centers have space for these larger vehicles. This will harmonize a solution with the mandates and an integrated EV charging model for dealerships allows for a new revenue stream from the EV charging and capacity credits.

This could or could not be available to public access, in general, I suggest a program that encourages public access at some reasonable level in the design.

An MHD program will likely prove to be more cost-effective than LDA toward the unused capacity which the current program generates. Further, MHD charging infrastructure could benefit and perfectly align with your new battery storage business consideration and I would encourage a % of battery storage to be included for Peak Time use Hours (maybe a 2-hour window) to continue to support grid constraints at Peak time and establish smarter designs that benefit the technology, end-users, and utility and society.

Update to the EER data:

An EER data update is required to establish EV Vehicle Standards with the MHD Class vehicles under the baseline method.

The Current program does not logically result in a method that supports the best and most efficient MHD EV's.

We need to begin developing awareness toward an EV MHD fuel economy standard for each MHD class whereby the most efficient kWh/mile achieves more credits and more opportunities toward increased revenues.

For example:




- Class 4-6 as one category
- Class 7-8 as one category

Instead of currently all Class 4-8 in one category.

The Fuel economies from the MHD should create a standard for the specific vehicle class as the amount of battery storage that is installed in the vehicle is similar to the class size. OEM's should design the technology with quality and with the best engineering judgment and components that achieve the best fuel economy. This directly impacts the fleets and ensures the technology creates a cost-per-mile benefit.

I do not object to the fuel density equivalent method. What needs updating is another step for converting the kWh/mile efficiency to a result that is higher and better for the most efficient class of MHD EV vehicles. Moreover, with this change, the less efficient vehicles will NOT continue gaining more credits as they currently can generate (see figure below).

YOUR ESTIMATED LCFS EXPLAINED.			
Fuel Revenue Credits Per Mile. Shuttle HDV.			
EV Per Mile Revenue			
Credit Price	HD (Class 4-5) = 5.0 EER		
\$/Credit	kWh/Mile	kWh/Mile	kWh/Mile
Value	0.8	1.1	1.5
\$100	\$0.11	\$0.15	\$0.20
\$160	\$0.17	\$0.24	\$0.33
** \$200	\$0.22	\$0.30	\$0.41

\$0.22 / mile or \$0.27 / kWh	\$0.30 / mile or \$0.27 / kWh	\$0.41 / mile or \$0.27 / kWh
E-Buses 	E-Buses 	E-Buses 
		Estimated LCFS Value

Essentially creating consideration for an average fuel economy standard for each MHD class is necessary and this will result in the best and most efficient vehicles with the most credits.

~Lisa McGhee, GreenPower Motor Company