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CleanFuture, Inc.
P.O. Box 23813
Portland, OR 97281-3813
+1 503 427-1968
john@CleanFuture.us

The Honorable Mary D. Nichols Chair
California Air Resources Board
1001 I Street
Sacramento, CA 95812

RE: Comments in Support of the Supplement to the Carl Moyer 2017 Program Guidelines

Dear Chair Nichols,

CleanFuture appreciates the opportunity to provide comments on the clarifications of eligibility requirements for transport refrigeration units proposed as a supplement to the Carl Moyer 2017 Program Guidelines. CleanFuture strongly supports CARB staff's recommendation to encourage funding of electric and hybrid transport refrigeration units and the electric infrastructure to support them. CleanFuture is a subject matter expert on electrification of transport refrigeration and refrigerated fleet efficiency. Incentive funding eligibility of electric standby / hybrid electric / all-electric transport refrigeration and infrastructure is essential to get these technologies more widely deployed.

Clean refrigerated transport technologies have been available for well over 15 years with electrified parking spaces (shore power) to operate parked refrigerated trailers and refrigerated trucks on grid-supplied electricity.[1] In the normal course of goods movement, transport refrigeration units (TRUs) accumulate significant stationary engine run hours (engine idling hours) to pre-cool trucks and trailers, for controlling cargo temperatures during loading and unloading, and for temperature control while staging loaded trucks and trailers for dispatch. Electrified parking spaces for idle reduction in electric-capable TRUs is a bridging technology to eventual zero-emission TRUs. Unfortunately, grid-powered electric TRUs (eTRU) have not been widely adopted notwithstanding commercially available grid-powered transport refrigeration.

[1] *Market and Technology Assessment of Electric Transport Refrigeration Units.* EPRI, Palo Alto, CA: 2015. 3002006036.

Clarifying TRU eligibility requirements should hopefully send a message to both refrigerated fleets and the Air Districts that administer the programs. Ultimately it is the Air Districts that select the projects at their own discretion.

Regrettably a large TRU replacement / electrification project was denied in last year's Carl Moyer program because of ambiguity in the 2017 Guidelines as electric standby was in the draft but struck in the final Guidelines. CleanFuture had been working with a large refrigerated fleet on an electrification / fleet efficiency initiative in 2017 and we submitted a project to replace 100 diesel-only TRUs with hybrid electric TRUs to run on grid-supplied electricity while parked at large distribution center. Unfortunately, the Air District denied the project a case-by-case review as outlined in the 2017 Carl Moyer Program Guidelines, the project never made it to CARB for a case-by-case review which effectively killed the project.

Electrification of TRUs is a viable and commercially available technology yet few fleets are adopting this cleaner, quieter, and less-expensive means to transport temperature-controlled cargo. The barriers are many, although typically related to technology adoption and not the technology itself. [2]

TRUs often concentrate at distribution centers and other freight facilities in and around disadvantaged communities. Therefore, electrification of TRUs aligns with the goals of the Community Air Protection Program. We strongly support the Staff's proposed clarification on TRU eligibility and the electric infrastructure to support eTRUs.

Thank you for your consideration. Please let me know anytime we can be a resource to the agency.

Sincerely,
CleanFuture, Inc.

John A. Thornton
President

[2] J. Thornton, J. MacArthur and H. Barham, "Electrification of Transport Refrigeration Units for Temperature-sensitive Freight: Technical Assistance Case Study in EPA Region 10," *Transportation Research Record: Journal of the Transportation Research Board,* 2018.