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Medium- & Heavy-Duty Vehicles/Market Structure, Environmental Impact, and EV Readiness: Environmental Defense Fund Report

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The Environmental Defense Fund (“EDF”) released a report titled:

Medium- & Heavy-duty Vehicles

Market Structure, Environmental Impact, and EV Readiness (“Report”)

The *Report* was prepared for EDF by Ana Lowell and Jan Culkin of M.J. Bradley & Associates.

The *Report* analyzes the United States’ medium- and heavy-duty vehicles (“MHDV”) in-use truck fleet in various respects such as:

- Identifying the most common vehicle types/uses
- Estimation of the environmental impact of each vehicle type/use
- Assessing readiness for greater adoption of zero-emitting technologies over the next 10 years (based on typical usage patterns and market status)

The importance of assessing the MHDV fleet is stated to be driven by estimates such as:

- MHDV includes 23 million vehicles on United States roads (i.e., transit/school busses, freight trucks, garbage and construction trucks, delivery vans and heavy-duty pickups)
- MHDV travel more than 430 billion miles a year
- MHDV utilize 55 billion gallons of fuel each year
- MHDV are estimated to emit more than 60% of the particulates from all United States vehicles

Four factors are stated to be evaluated in assessing the readiness of zero-emitting MHDVs in different applications which include:

- Availability of electric models from manufacturers
- The requirements for charging
- The ability of electric models to meet operating requirements
- Business case for zero-emitting vehicles

In performing the analysis the *Report* grouped 80% of the MHDV fleet into 17 market segments which it described as having broadly similar vehicle configuration and usage patterns. The number of vehicles in

the segment was estimated using registration data collected from all states. A United States Environmental Protection Agency Motor Vehicle Emissions Simulator model was used to estimate the environmental impact of each market segment.

Each market segment is stated to have been evaluated based on four relevant factors which are believed to impact truck owner decisions about purchase of an electric vehicle. These include:

- Availability of electric model from major manufacturers (commercial EV market)
- Infrastructure requirements for vehicle charging
- The ability of current EV models to meet operating requirements (technical feasibility)
- Prospects for cost parity with current diesel and gasoline vehicles

The *Report* argues there are a significant number of market segments that have favorable ratings across at least three of the four relevant factors.

A copy of the *Report* can be downloaded [here](#).