

April 30, 2026

GUIDELINES FOR COLLECTING MEDIUM- AND HEAVY-DUTY ZERO-EMISSION VEHICLE TRANSACTION PRICE DATA IN VEHICLE PURCHASE INCENTIVE PROGRAMS

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BACKGROUND

Class 2b-8 medium- and heavy-duty vehicles – including large pickup trucks, cargo vans, delivery trucks and vans, box trucks, school and transit buses, and short- and long-haul tractor trucks – primarily run on diesel fuel and are a major source of criteria pollutants and greenhouse gas emissions within the transportation sector. Transitioning to zero-emission technologies is critical to protect public health and mitigate the worst effects of climate change, especially in frontline communities located near freight distribution centers and high-volume freight corridors.

Medium- and heavy-duty zero-emission vehicles (MHD ZEVs) carry a higher upfront cost than diesel vehicles, however, battery prices are steadily declining, and market competition is increasing. To help lower the upfront price differential for MHD ZEVs, state and local governments are implementing purchase incentive programs, which in turn accelerate the adoption of zero-emission trucks and buses. However, despite battery technology and market advancements and the availability of purchase incentives, analysis from the International Council on Clean Transportation (ICCT) found that transaction prices are rising for some categories of MHD ZEVs, including Class 6 straight trucks, Class 8 tractor trucks, and Class 8 transit buses.¹ Higher and rising upfront purchase costs hinder the adoption of zero-emission trucks and buses, undermine states' public health and climate commitments, and undercut the effectiveness of purchase incentive programs by reducing the number of MHD ZEVs per dollar invested.

At the direction of the Multi-State Zero-Emission Vehicle (ZEV) Task Force,² the Northeast States for Coordinated Air Use Management (NESCAUM) convened the Zero-Emission

¹ Xie, Y. and Minjares, R. (2025) Battery-electric commercial vehicle pricing in the United States. International Council on Clean Transportation. Available at <https://theicct.org/publication/battery-electric-commercial-vehicle-pricing-in-the-us-sept25/>.

² The ZEV Task Force is comprised of state agency representatives from the following jurisdictions: California, Colorado, Connecticut, Delaware, Hawaii, Maine, Maryland, Massachusetts, Nevada, New Jersey, New

Truck Pricing Transparency Workgroup to identify data important to understanding MHD ZEV transaction pricing trends and opportunities to make the data available for analysis.

The workgroup included staff from NESCAUM and ICCT and state MHD ZEV purchase incentive program administrators from California, Colorado, Maryland, Massachusetts, New Jersey, New York, and Washington. These guidelines recommend steps that state incentive program administrators can take to harmonize the collection of vehicle transaction data and facilitate the availability of incentive program data, thereby increasing MHD ZEV market transparency.

THE STATE OF MEDIUM- AND HEAVY-DUTY VEHICLE TRANSACTIONS

Commercial medium- and heavy-duty vehicle transactions differ from light-duty passenger vehicle transactions. Manufacturers of passenger vehicles publish their suggested retail price or “sticker price” along with add-on fees, whereas commercial medium- and heavy-duty vehicle prices are not usually publicly available. Commercial medium- and heavy-duty vehicles are often custom built for specific vocations, which makes it more challenging to disclose upfront purchase prices. In addition, commercial vehicle transactions may include fleet pricing or bulk discounts and contract-based pricing agreements with additional clauses for contract revisions. These realities limit the availability of key transaction data in the public domain, which obstructs transparency in the medium- and heavy-duty vehicle market and makes it difficult to assess pricing trends.

BENEFITS OF HARMONIZING MHD ZEV TRANSACTION DATA COLLECTION

In the absence of publicly available commercial vehicle price data, transaction data from MHD ZEV purchase incentive programs can serve as a proxy for analyzing MHD ZEV pricing trends and improving market transparency. Vehicle purchase incentive programs currently collect various vehicle and transaction data from applicants, but existing programs may not require submission of data fields necessary to analyze transaction price trends over time. Moreover, these programs may define similar transaction data fields differently and collect data in varying formats. Opportunities exist for vehicle purchase incentive programs to harmonize data collection practices and availability to improve market transparency for fleet customers, encourage greater competition and innovation among commercial vehicle manufacturers, reduce the price of MHD ZEVs, improve program

Mexico, New York, North Carolina, Oregon, Pennsylvania, Rhode Island, Vermont, Virginia, Washington, the District of Columbia, and the Province of Quebec.

performance by making efficient use of funding and resources, and ultimately accelerate uptake of MHD ZEVs.

IDENTIFYING INCENTIVE PROGRAM DATA TO IMPROVE MHD ZEV MARKET TRANSPARENCY

Building on ICCT’s prior analysis, the Zero Emission Truck Pricing Transparency Workgroup identified the data fields most critical to enable analysis of vehicle pricing trends and improve market transparency. As shown in Table 1 below, the data fields are grouped into three tiers: “required,” “recommended,” and “optional.” The data fields identified and corresponding tiers reflect the consensus of the workgroup.

The “required” tier refers to the data fields necessary to enable analysis of pricing trends over time, across states, and across vehicle types. These required data fields are most important to advancing pricing transparency. The “recommended” tier refers to data fields that complement the “required” fields, and they enable further analysis of pricing trends with more dimensions and details. Finally, the “optional” tier represents data fields that support other policy and vehicle purchase program objectives but have limited impact on vehicle price transaction analysis.

TABLE 1: LIST OF DATA FIELDS TO COLLECT IN MHD ZEV PURCHASE INCENTIVE PROGRAMS

REQUIRED DATA FIELDS		
ITEM (SAMPLE VALUE)	DEFINITION	EXPLANATION OF IMPORTANCE
Make <i>ZETractor</i>	Name of vehicle manufacturer	Vehicle manufacturer name is the first level of identifying information.
Model <i>ZETractor Long Haul</i>	Full model name provided by the vehicle manufacturer	Some models have several variants and configurations with different weight classes, body types, and battery capacities, so it is important to be specific.
Model Year <i>2026</i>	Model Year of vehicle purchased	Model Year information relates to vehicle production and supports analysis of price changes and fluctuations over time.
GVWR class <i>Class 8</i>	Basic information about vehicle GVWR (Class 2b-8)	Some models have several variants and configurations, including weight classes, so it is important to be specific.
Vehicle type <i>Tractor truck</i>	The type of vehicle, often informed by its vocation or duty cycle - e.g., tractor truck, rear-loader refuse truck, school bus, transit bus, etc.	Some models have several variants and configurations, including vehicle types and vocations, so it is important to be specific.

Vehicle Identification Number (VIN) <i>7N3GDVLAHY*****</i>	Unique identification number assigned to the vehicle purchased	Once a vehicle is delivered, its VIN can be decoded to determine the vehicle make, model, and model year. This data point can be provided in lieu of those data fields.
Battery capacity (in kWh) <i>500 kWh</i>	The rated capacity of batteries in battery electric vehicles and fuel cell electric vehicles	Batteries account for a significant share of vehicle costs. Battery capacity information is also useful for understanding the technology evolution of the market.
ZEV unit price in purchase order <i>\$450,000</i>	Unit price quoted in purchase order, excluding fees and taxes, when fleets/dealers have their application submitted/approved	The emphasis is on the vehicle unit price. If quotes for vehicles are bundled with infrastructure, service, and other add-ons, it becomes difficult to separate out the variable customization costs.
ZEV unit price in final transaction invoice <i>\$475,000</i>	Unit price in the final transaction invoice when vehicles are delivered, excluding fees and taxes	The final transaction/invoice price is often different from the price in the purchase order. It is helpful to track how this value differs from the ZEV unit price. Itemized invoices are preferred to help identify any applicable vehicle customization (e.g., upfit as a tow truck).
Incentive amount per vehicle <i>\$150,000</i>	The amount of the subsidy received from the incentive program for each vehicle purchased	Identifies how much state programs are incentivizing purchases on a per vehicle basis.

RECOMMENDED DATA FIELDS		
ITEM (SAMPLE VALUE)	DEFINITION	EXPLANATION OF IMPORTANCE
Number of vehicles per application <i>20 vehicles</i>	The number of vehicles associated with the application/purchase order in the state incentive program record	Helps illustrate if bulk purchases are happening and whether they impact unit prices.
Bulk price discount <i>5% or \$10,000 per vehicle purchased</i>	Reduction in the price per vehicle unit when a fleet customer buys a large quantity of vehicles	Helps identify the monetary value of any discounts applicable to bulk purchase orders and the actual cost fleets pay per vehicle.
Equivalent diesel vehicle price <i>\$200,000</i>	Price of diesel vehicles in the same weight class, with the same body type, and performing the same duty cycles	Helps inform whether prices of ZEVs change with diesel vehicle price baselines. It may be readily available if an incentive program is tied to the price differential between diesel vehicles and ZEVs.
Manufacturer's Suggested Retail Price (MSRP) <i>\$400,000</i>	The "sticker price" of vehicles, set by manufacturers	MSRP may or may not be followed by dealers.

Purchase order date <i>01/01/2026</i>	The date of purchase order when applicants secured a quote with vehicle dealers	May be valuable if vehicle delivery is delayed and there is a time gap between the purchase order date and model year of delivered vehicles that influences the final transaction price.
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OPTIONAL DATA FIELDS		
ITEM (SAMPLE VALUE)	DEFINITION	EXPLANATION OF IMPORTANCE
Additional funding sources/incentives <i>Utility incentive - \$50,000</i>	Itemized funding provided by other federal, state, municipal, utility, and other incentive programs to support vehicle purchase	Helps illustrate the amount fleet customers are paying out of pocket for ZEVs after all financial incentives.
Dealership Name <i>John Smith Truck and Engine</i>	Name of dealership involved in vehicle transaction	Can be used for follow-up outreach to better understand individual transaction details.

To provide a strong baseline for collecting the vehicle transaction data most important to assessing pricing transparency, at a minimum, vehicle purchase incentive programs should incorporate the “required” data fields into program manuals, application forms, and web portals, as applicable. To promote even greater pricing transparency, incentive programs should incorporate the “recommended” data fields in addition to the “required” data fields. For maximum pricing transparency, incentive programs may also want to incorporate the data fields identified as “optional”.

A selection of MHD ZEV incentive programs administered in ZEV Task Force states are listed below in Table 2. As of April 1, 2026, the programs in California, Colorado, Maryland, and New York, were collecting all the “required” data fields listed in Table 1. Only one “required” data field – battery capacity (in kWh) – is missing from the programs in Massachusetts, New Jersey, Oregon, and Washington. When vehicle purchase incentive programs are amended to incorporate additional data fields, program administrators should also incorporate and apply definitions consistent with these guidelines. A harmonized approach to defining and collecting the “required,” “recommended,” and “optional” data will enable more efficient interpretation and analysis across incentive programs.

MHD ZEV PRICING TRANSACTION DATA AVAILABILITY

Many of the MHD ZEV purchase incentive programs listed in Table 2 report information about their incentive program awards via a publicly accessible website or dashboard. Where applicable, links are provided in Table 2.

Incentive program administrators can play a further role in disseminating vehicle price and specification data and supporting a healthy, transparent commercial MHD ZEV market by publishing and sharing transaction data for vehicles awarded under the programs. It is recommended, to the extent possible, that incentive programs make the “required” transaction data available for analysis by publication, download, or transfer. Transaction data not readily available on program websites or dashboards can be requested from program contacts listed in Table 2.

TABLE 2: SELECTED STATE MHD ZEV PURCHASE INCENTIVE PROGRAMS INFORMATION

STATE	AGENCY	PROGRAM NAME	CONTACT	DATA SOURCE (IF APPLICABLE)
California	Air Resources Board	Clean Truck and Bus Voucher Incentive Project (HVIP)	info@californiahvip.org	https://californiahvip.org/impact/
Colorado	Department of Public Health and Environment	Clean Fleet Vehicle and Technology Program (CFVT)	cdphe_cfe@state.co.us	https://cdphe.colorado.gov/enterprise-boards/clean-fleet-enterprise
Hawai'i	State Energy Office	Diesel Replacement Rebate Program	dbedt.energyoffice@hawaii.gov	
Maryland	Energy Administration	Medium-Duty and Heavy-Duty Zero-Emission Vehicle Grant Program	transportation.mea@maryland.gov	https://energy.maryland.gov/transportation/Pages/MediumandHeavyDutyGrant.aspx
Massachusetts	Department of Energy Resources	Massachusetts Offers Rebates for Electric Vehicles (MOR-EV Trucks)	mor-evtrucks@energycenter.org	https://mor-ev.org/statistics-trucks
New Jersey	Department of Environmental Protection	Diesel Modernization Program (DMP)	stopthesoot@dep.nj.gov	https://dep.nj.gov/stopthesoot/equipment-modernization-program/
New Jersey	Economic Development Authority	New Jersey Zero-Emission Incentive Program (NJ ZIP)	njzip@njeda.gov	https://njdep.maps.arcgis.com/apps/dashboards/71e62ee3de2d4a6585bf4766881406c6
New York	New York State Energy Research and Development Authority	New York Truck Voucher Incentive Program (NYTVIP)	NYTVIP@energycenter.org	https://data.ny.gov/Energy-Environment/New-York-Truck-Voucher-Incentive-Program-NYTVIP-Pr/iisb-7u6z/about_data
Oregon	Department of Environmental Quality	Zero-Emissions Rebates for Oregon (ZERO) Fleets	zerofleet@deq.oregon.gov	
Washington	Department of Transportation	Washington Zero-Emission Vehicle Incentive Program (WAZIP)	info@wazip.org	https://wazip.org/

NEXT STEPS

These guidelines provide a solid foundation and highlight opportunities for advancing analytical and policy efforts to enhance MHD ZEV purchase incentive program effectiveness, improve market transparency, and empower fleet consumer choice. NESCAUM and ICCT staff will consult with members of the Multi-State ZEV Task Force and other key partners to inform the next stage of research and engagement to support policymaking. Potential examples include:

- supporting states' efforts to update and expand data collection activities in MHD ZEV incentive programs;
- coordinating with states to streamline public access to MHD ZEV incentive program data;
- developing recommendations to increase the cost-effectiveness of MHD ZEV incentive programs;
- identifying opportunities to standardize application processes and materials to remove barriers and increase fleet participation in MHD ZEV incentive programs; and
- exploring opportunities to collect additional MHD ZEV transaction data through state fleet procurement.

ACKNOWLEDGEMENTS

These guidelines were prepared by NESCAUM and ICCT on behalf of the Multi-State ZEV Task Force.

A special thank you is extended to the members of the Zero-Emission Truck Pricing Transparency Workgroup, which is comprised of MHD ZEV purchase incentive program administrators from the following states: California, Colorado, Maryland, Massachusetts, New Jersey, New York, and Washington, who provided guidance and feedback throughout the development of this resource. Any errors or omissions are the responsibility of the authors.