

# PENNSYLVANIA MEDIUM- AND HEAVY-DUTY VEHICLE ELECTRIFICATION

Market Overview and Policy Landscape

June 2023





*A DC-based policy tech firm established 2015*

Atlas Public Policy equips businesses and policymakers to make **strategic, informed decisions that serve the public interest**. Atlas builds analytical tools and dashboards using powerful, accessible technology, and offers expert advisory services to tackle the pressing issues of the day.

Transportation

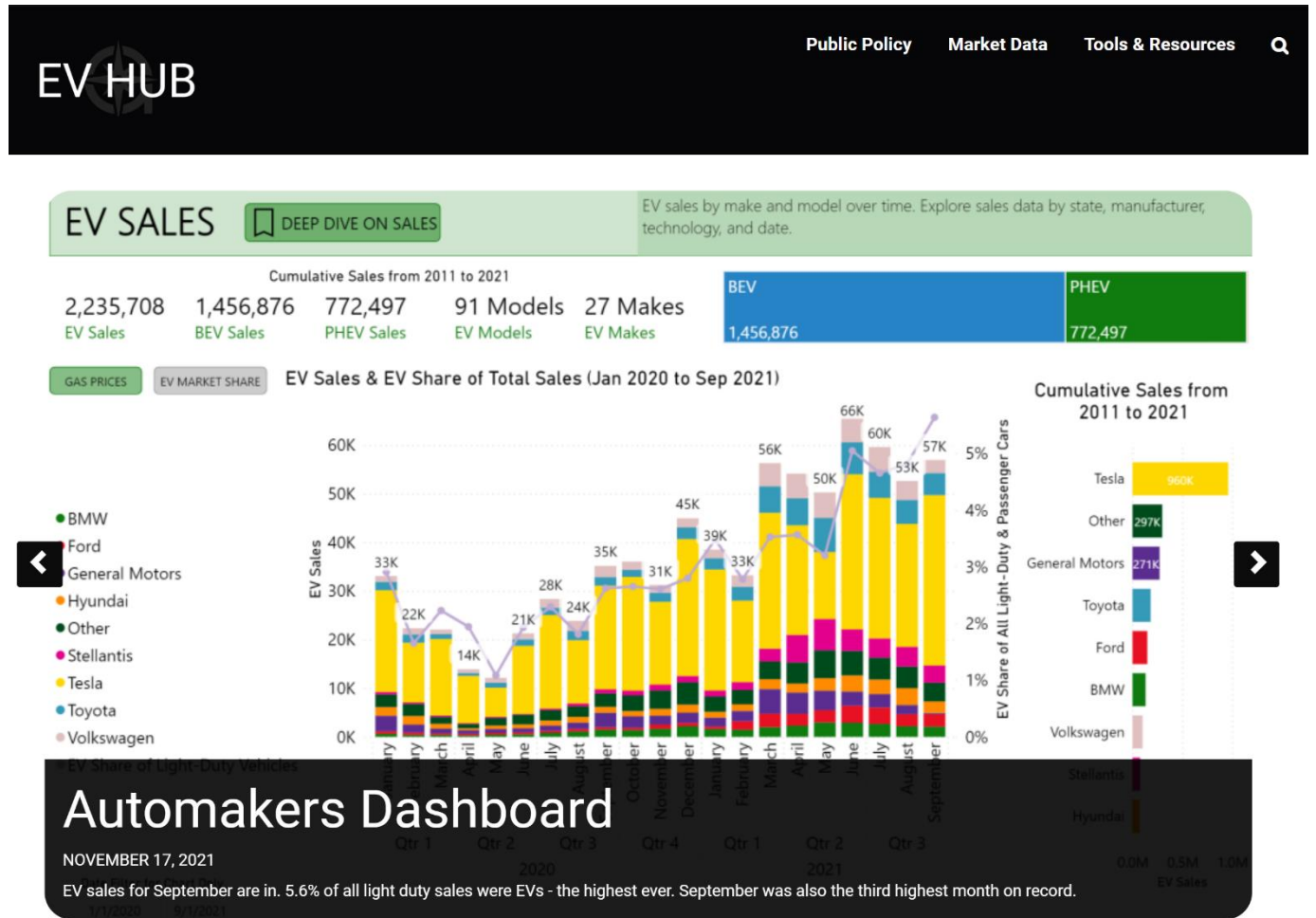
Buildings

Climate

Disinformation

# ABOUT THE DATA

- EV Hub gives stakeholders from across the EV industry quick access to key data and information on the market, policies and regulations, and activities by the EV community
- Data drawn from EV Hub unless otherwise noted
- **Free access for public agencies and Clean Cities Coordinators!**
- [www.atlasevhub.com](http://www.atlasevhub.com)





# OVERVIEW

## Overview

MDHD EV Market

State Funding & Policy

Federal Funding & Policy

# BENEFITS

## Zero Tailpipe Emissions

- MDHD vehicles largest contributor to mobile emissions of NO<sub>x</sub> ([EPA](#))

## GHG Emission Reductions

- MDHD vehicles responsible for 23% of transportation sector GHG emissions ([EPA](#))
- Electric MDHD vehicles can produce less than half the GHG Emissions of a MDHD diesel vehicle ([UCS](#))

## Equity

- PM<sub>2.5</sub> exposure from on-road sources relative to national average ([UCS](#))
  - Asian American +34 %
  - African American +24 %
  - Hispanic or Latino +23 %
  - White -14%



# CHALLENGES

## Charging Infrastructure Needs

- \$100 to \$166 billion needed by 2030 to be on the path to 100 percent electric MDHD truck sales by 2040. ([Atlas Public Policy](#))

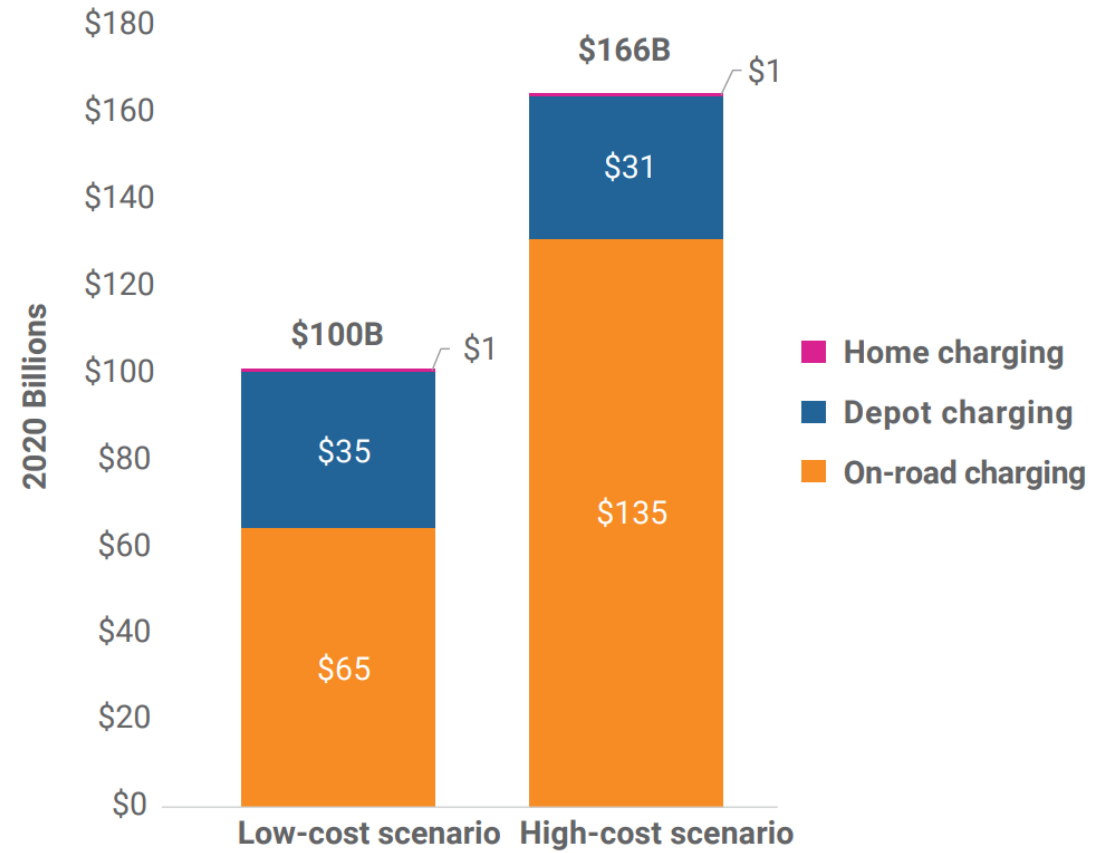
## High Upfront Costs

- Can be as high as 2-4 times the cost of diesel vehicles ([NREL](#))

## Electric Vehicles Don't Fit Every Use Case Today

- BEVs still lag in payload capacity, range, and fueling time. ([NACFE](#))

## Modeled investment needed by end of 2030, by charging location





# MDHD EV MARKET

Overview

**MDHD EV Market**

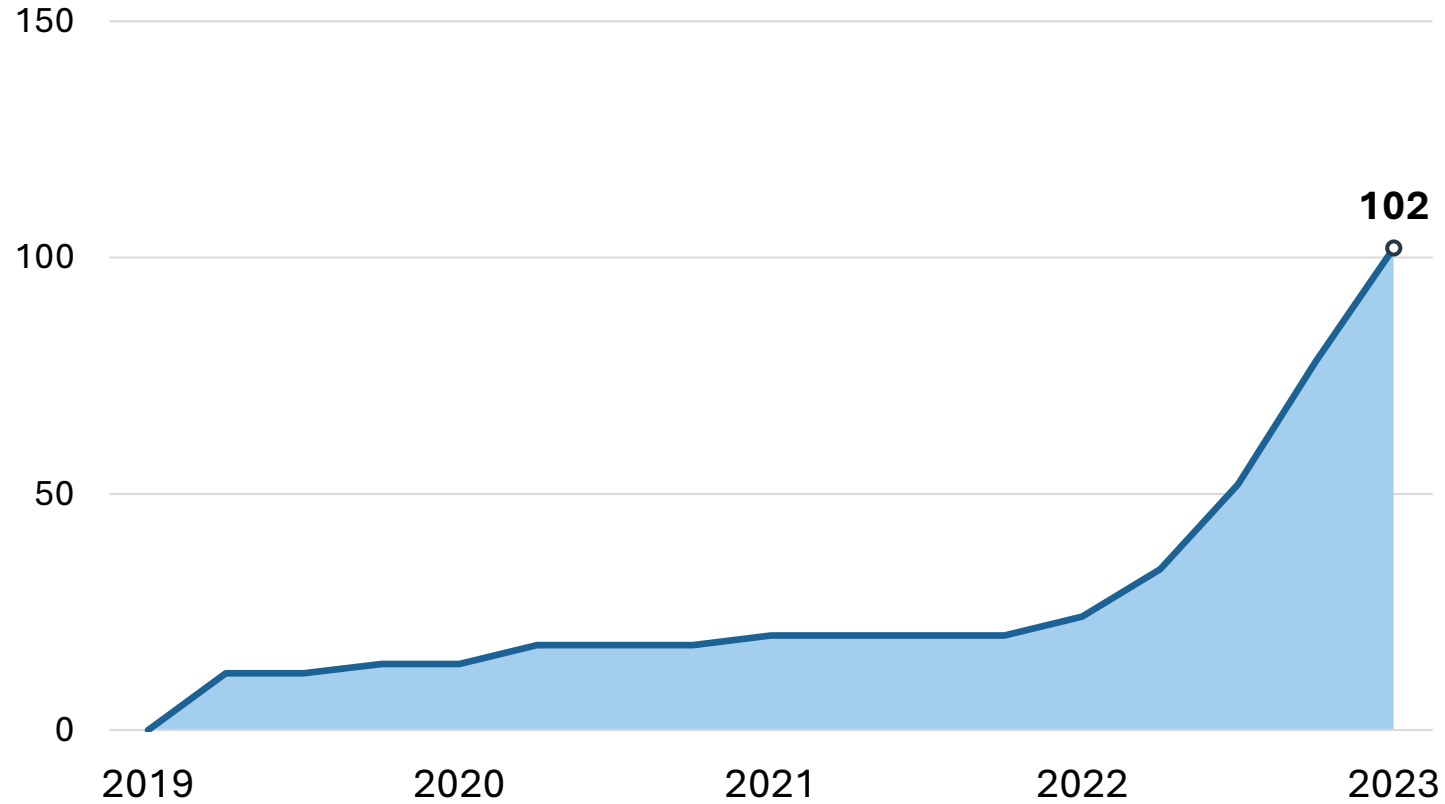
State Funding & Policy

Federal Funding & Policy

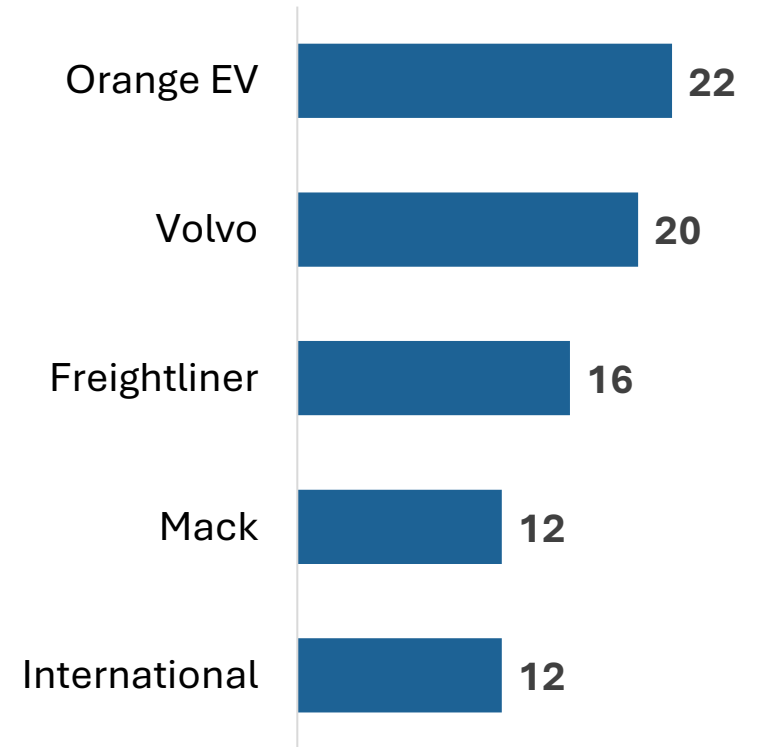
# OVER 100 HEAVY DUTY EVS SOLD IN PA

## Cumulative Heavy-Duty (Class 4-8) EV Sales in Pennsylvania

*New EV Sales (2019 through Q1 2023)*



## Cumulative HD EV Sales by OEM (Top 5)

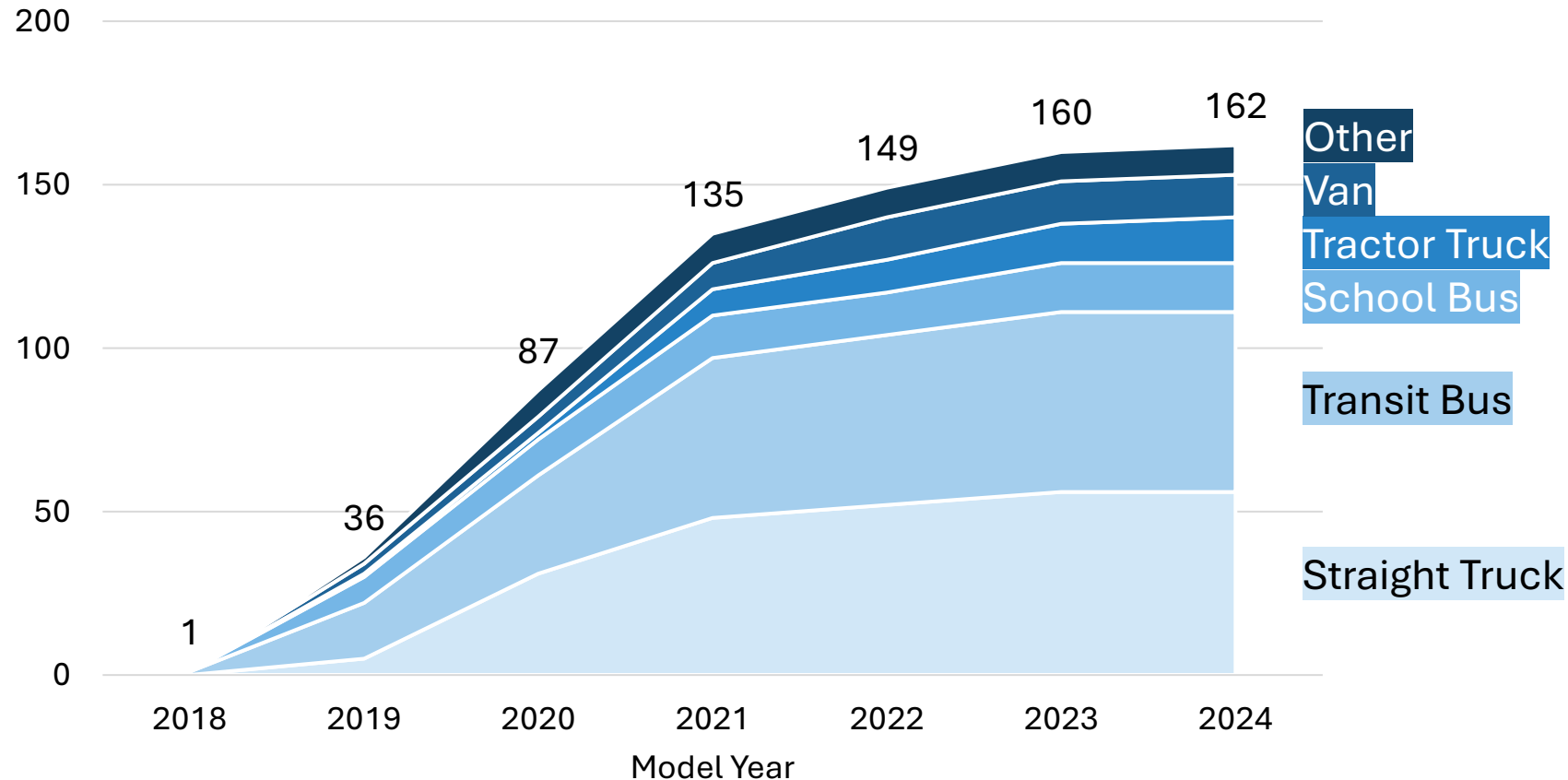




# MEDIUM- & HEAVY-DUTY EV OPTIONS ARE EXPANDING

## Current and Announced Heavy-Duty (Class 4-8) EV Model Availability

Cumulative Announced EV Models

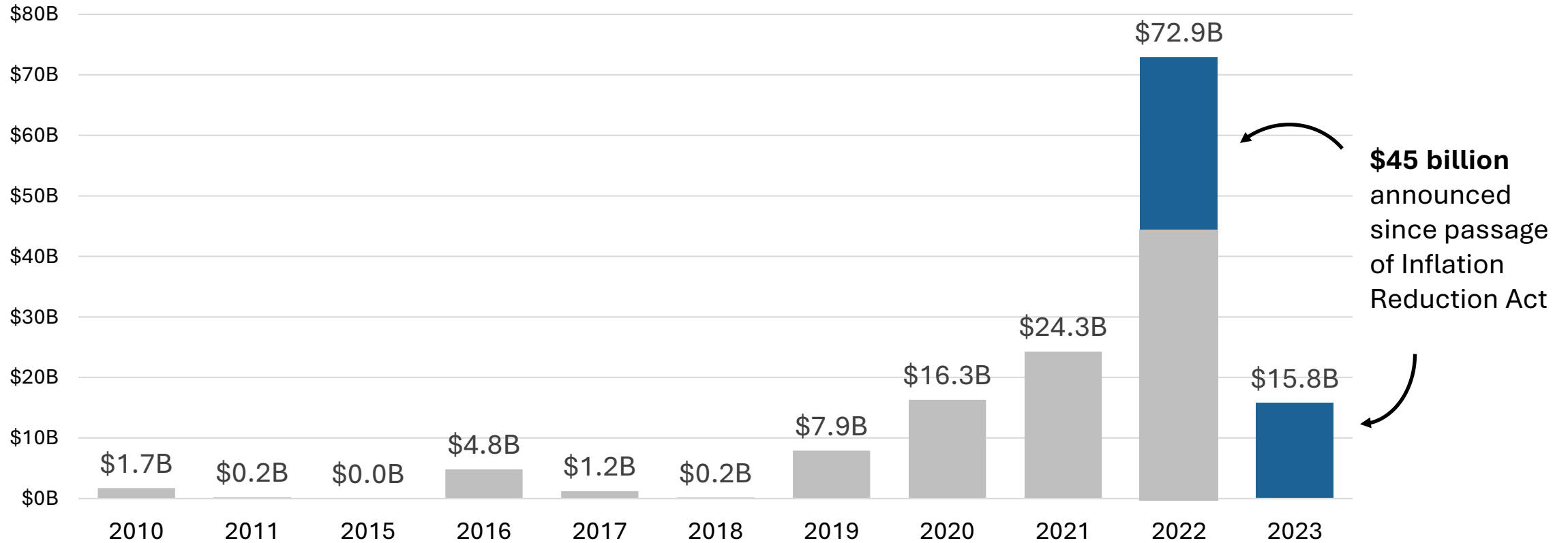


- Over 150 heavy-duty EV models expected by model year 2024
- Some MDHD EVs have already reached total cost of ownership parity with diesel, others expected soon ([ICCT](#))

# FEDERAL LEGISLATION SPURS EV MANUFACTURING INVESTMENT

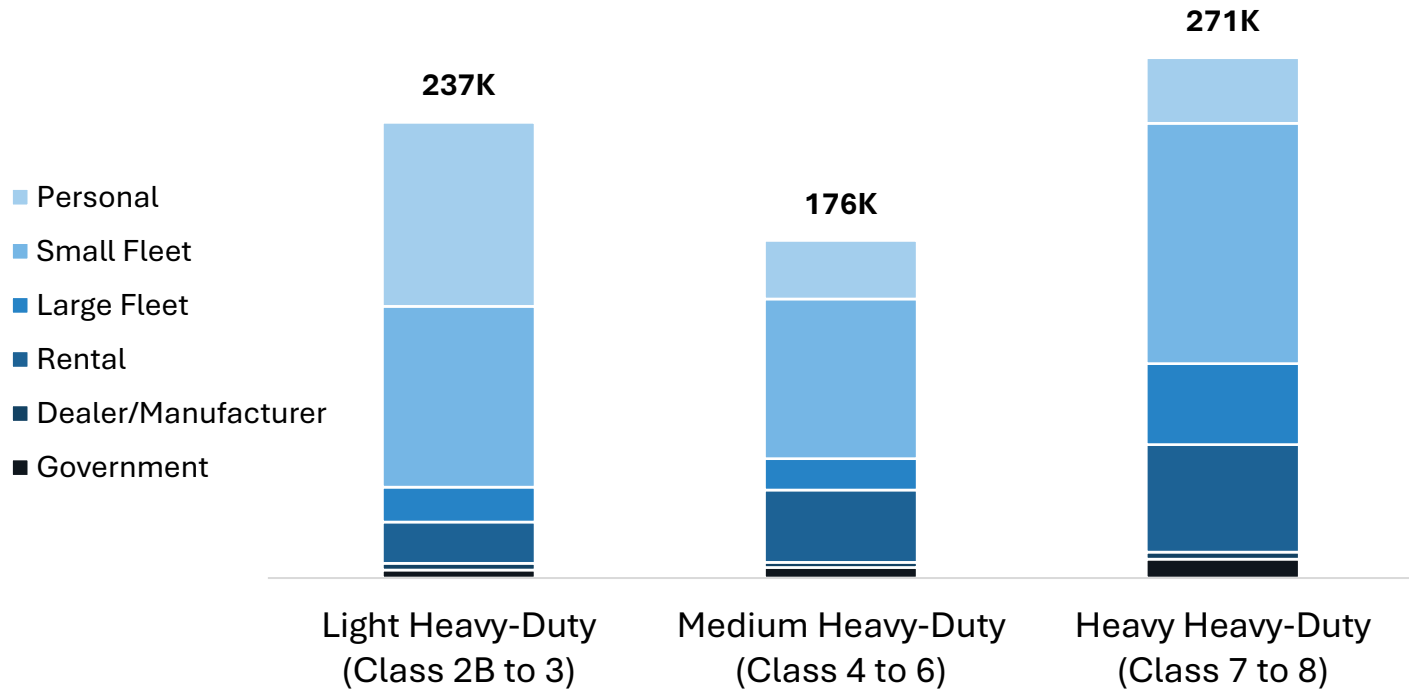
Announced Investment in EV and EV Battery Manufacturing Facilities (2010 through Q1 2023)

*Announced Investment (in billions)*

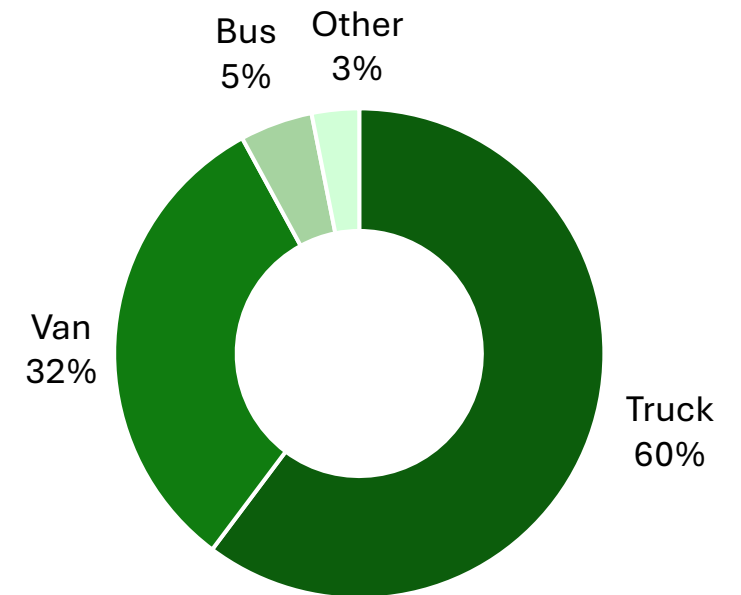


# NEARLY 700,000 MDHD VEHICLES ON THE ROAD IN PENNSYLVANIA

## MDHD Vehicles by Vehicle Class and Fleet Type



## MDHD Vehicles by Use Case



*Excludes Pickups and SUVs*



# STATE FUNDING & POLICY

Overview

MDHD EV Market

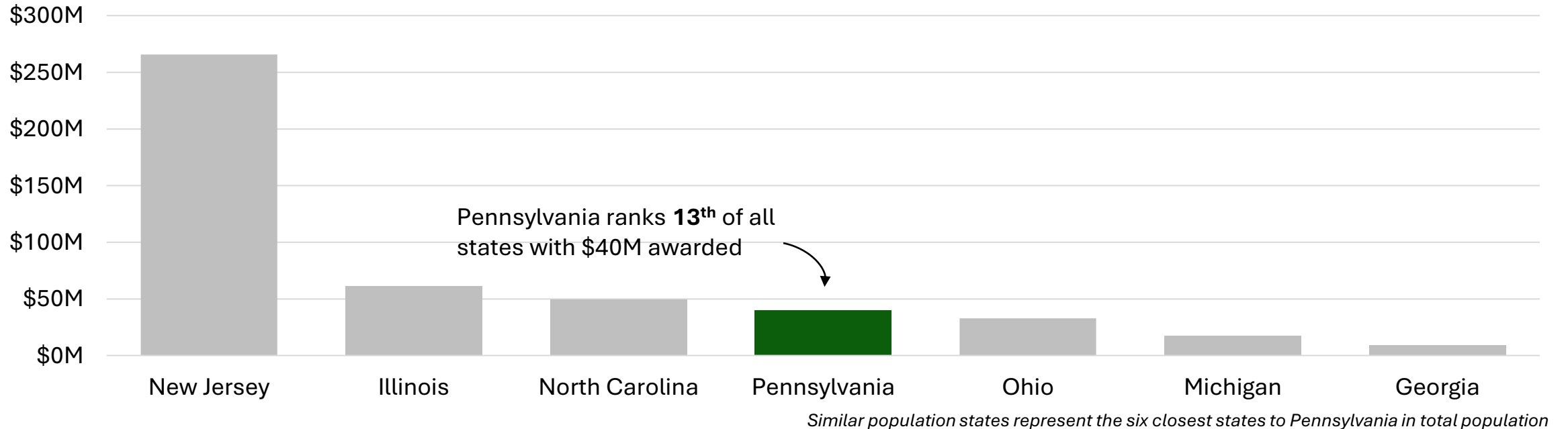
**State Funding & Policy**

Federal Funding & Policy

# PENNSYLVANIA PUBLIC FUNDING FOR EVS ON PAR WITH SIMILAR-POPULATION STATES

Public funding awarded for EVs and EV charging compared to similar-population states (through May 2023)

*Public Funding Awarded (in millions)*



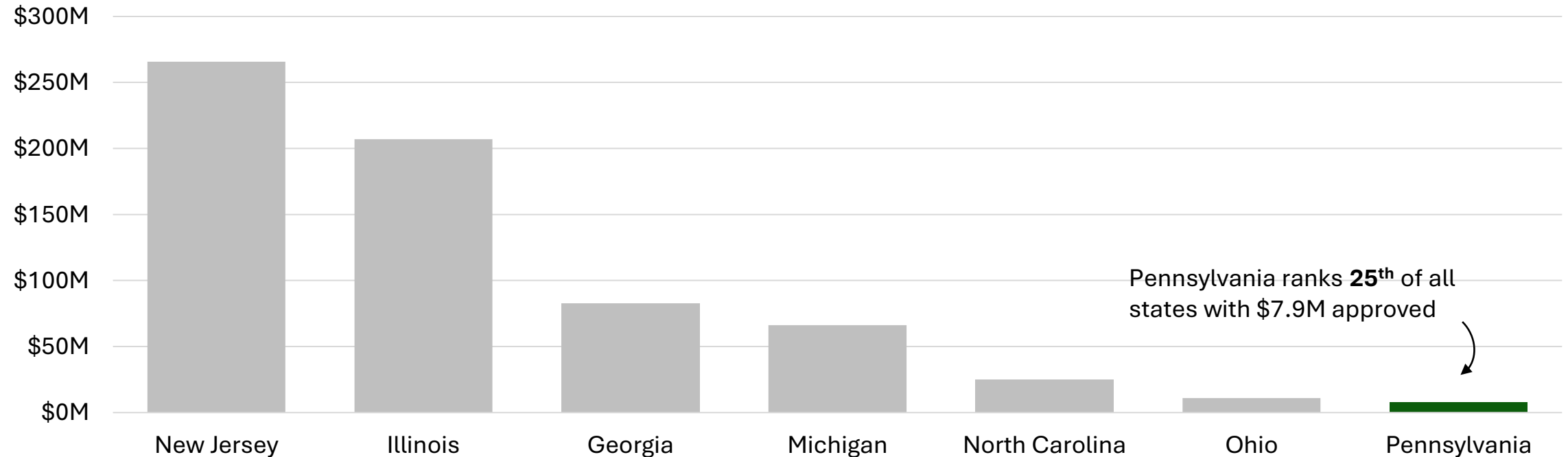
## EV Funding Initiatives in Pennsylvania

- In December 2022, Department of Environmental Protection (DEP) launched \$12.7M program funded by Volkswagen Settlement to electrify local freight trucks
- DEP has already awarded more than \$25M for electric buses, trucks, and off-road equipment
- DEP has also awarded \$15M from Volkswagen Settlement for public EV charging stations

# PENNSYLVANIA TRAILS SIMILAR-POPULATION STATES IN UTILITY INVESTMENT FOR EVS

Utility investment approved for EVs compared to similar-population states (through May 2023)

*Approved Utility Investment (in millions)*



*Similar population states represent the six closest states to Pennsylvania in total population*

## Electric Utility EV Initiatives

- Duquesne Light Company [Fleet Charging Program](#) offers fleet advisory services and up to 50% rebate on Level 2 or DC Fast Charger
- PECO EV Smart program offers [L2 commercial charger rebate](#) for up to 20 ports as well as a [pilot discount](#) for customers installing DCFC stations

# FEDERAL FUNDING & POLICY

Overview

MDHD EV Market

State Funding & Policy

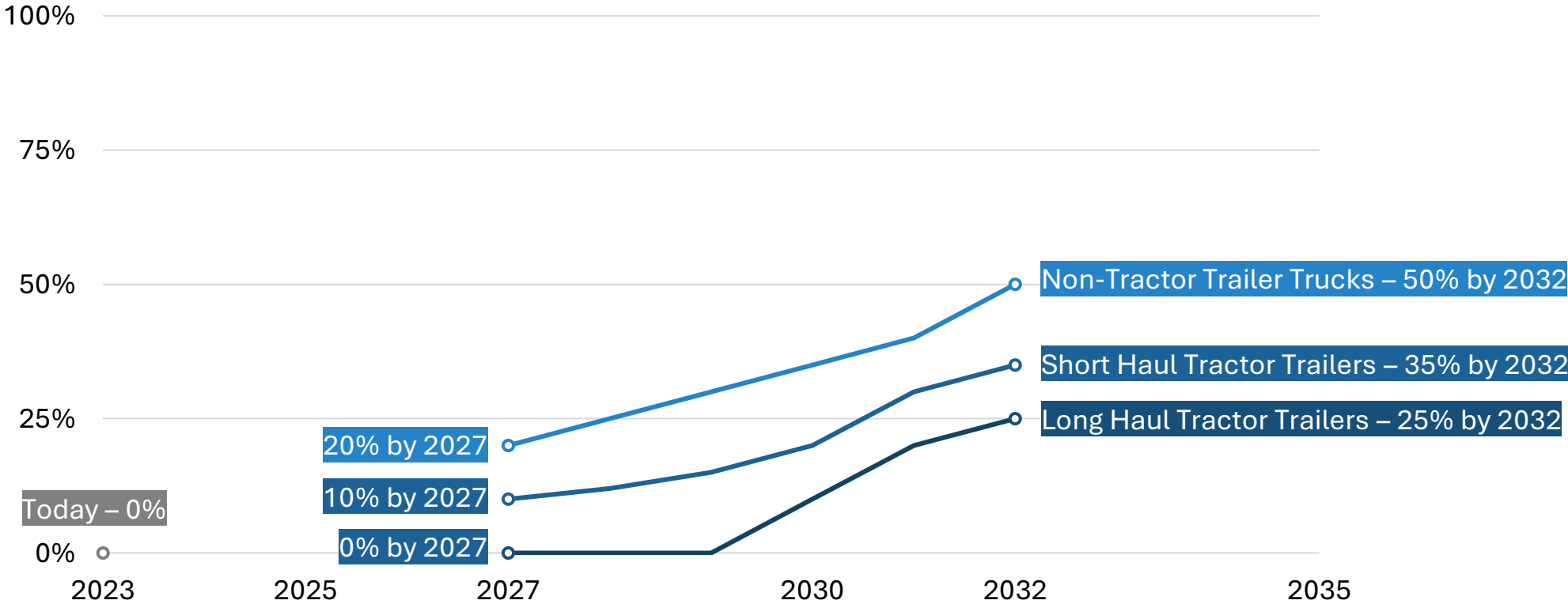
**Federal Funding & Policy**



# PROPOSED EPA EMISSIONS STANDARDS WOULD REQUIRE ACCELERATION OF ZEV HEAVY-DUTY VEHICLES

Actual and projected heavy-duty (class 4-8) ZEV market share under proposed EPA vehicle emissions standards

Electric Vehicle New Sales Share





# IIJA AND IRA UNLEASH BILLIONS

## EV Charging

- **\$5 billion** for National Electric Vehicle Infrastructure (NEVI) Formula
- **\$2.5 billion** for Charging and Fueling Infrastructure (CFI) grants

## MDHD Vehicles

- **\$5.6 billion** for Low or No Emission (Bus) Grant Program
- **\$5 billion** for Clean School Bus Program
- **\$3 billion** for Grants to Reduce Air Pollution at Ports
- **\$1 billion** for Clean Heavy-Duty Vehicles

## Manufacturing

- **\$6 billion** for battery processing and manufacturing
- **\$40 billion** in loan authority for advanced energy manufacturing

## Tax Credits

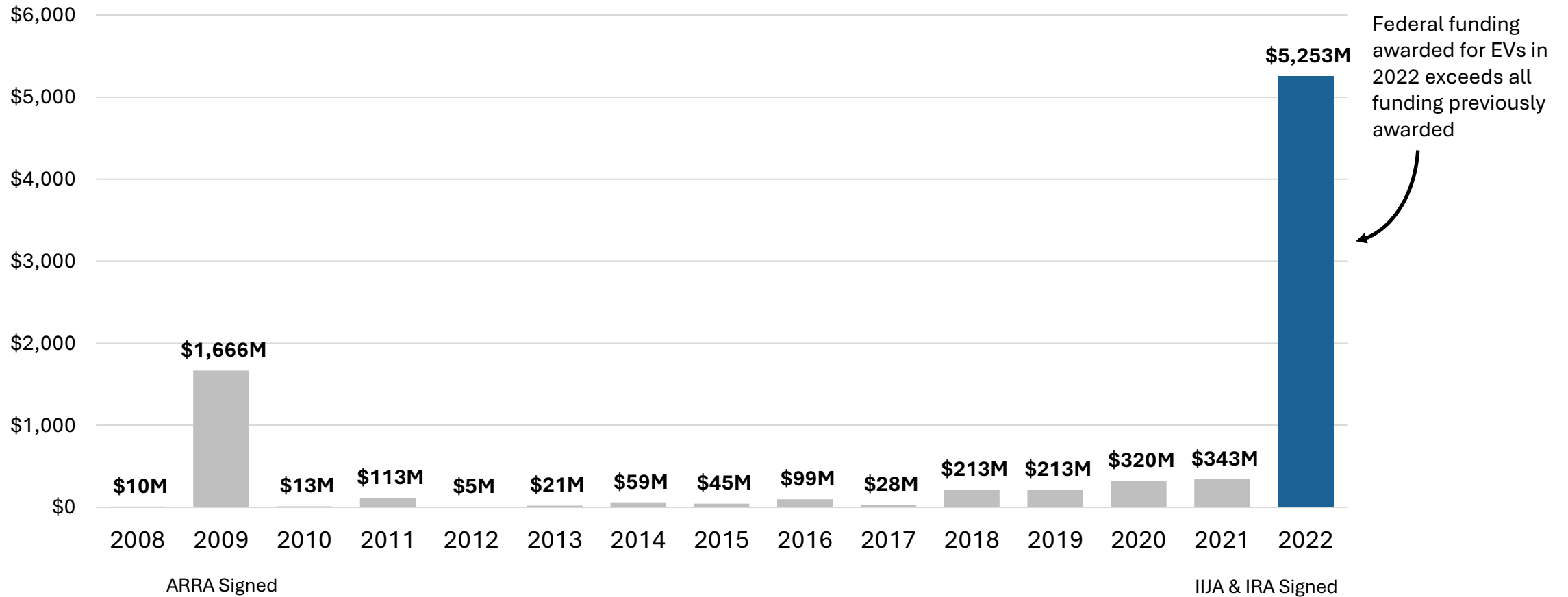
- **\$7,500** for purchase of a new EV (\$4,000 for used)
- **\$40,000** Tax Credit for purchase of clean commercial vehicle
- **\$100,000** for fueling infrastructure in low-income and rural communities



# IIJA AND IRA ALREADY MAKING AN IMPACT

Federal Funding Awarded for EVs (2008 to 2022)

Funding Awarded (in millions)



Includes funding for deployment, manufacturing, and research and development. Excludes loans and tax credits.

Source: [Atlas EV Hub](#)

# FEDERAL FUNDING IS COMING TO PENNSYLVANIA

- Formula funding available under the Infrastructure Investment and Jobs Act:
  - **\$172 million** for an EV charging network in the state
  - **\$265 million** to reduce transportation-related emissions
- Competitive funding awarded to Pennsylvania:
  - **\$34 million** for electric school buses
  - **\$23 million** for electric transit buses
- Pennsylvania can still compete for additional EV-eligible grant funding

Source: [Department of Transportation](#)



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