

MARYLAND ZERO EMISSION

Electric Vehicle Infrastructure Council

January 25, 2024

Agenda

- Welcome and Announcements
- Public Comments
- 2024 Legislative Session
- PSC Orders Related to Electric Vehicles
- Market Research Report: Understanding Marylanders' Perceptions Towards Electric Vehicles
- MEA FY 2024 Grant Programs and Rebates
- Closing Remarks



Welcome and Announcements

Deron Lovaas, ZEEVIC Chair & MDOT Chief of Environment and Sustainable Transportation

ZEEVIC Member Welcome

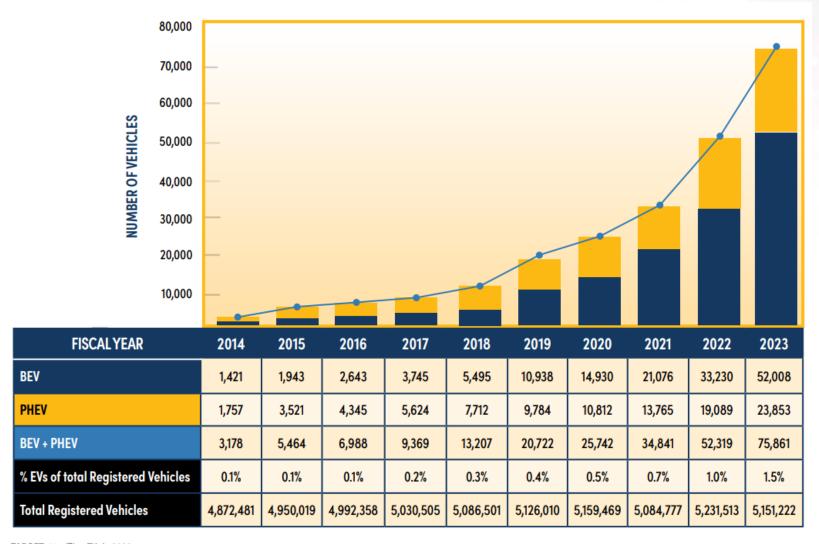


Ron Kaltenbaugh

ZEEVIC Seat: Environmental Community
Affiliation: Electric Vehicle Association of Greater Washington DC



Maryland By the Numbers



Maryland By the Numbers*:











*As of December 31, 2023:

MDOT 2024 Annual Attainment Report

Announcements - MDOT

NEVI Request for Proposals Released

✓ NEVI Round 1 Program

- RFP issued January 16 via eMaryland Marketplace Advantage (eMMA)
- February 13: Pre-Proposal Conference
- April 10: Proposals Due
- Summer 2024: Awards
- Round 2 will follow

√ For More Information

- evplan.mdot.maryland.gov
- NEVIprocurement@mdot.maryland.gov

Round 1 Program

- Approx. \$30 million available
- Up to 40 additional charging stations
- Target Areas identified for all Corridors





Announcements - MDOT

EV Charger Reliability and Accessibility Accelerator Grant (NEVI Set-aside)

Grants were awarded to 14 State
Departments of Transportation and 10 local
entities in 20 States.

MDOT \$4.36 million funding award:

- The grant provides MDOT a pilot opportunity to test out NEVI fund implementation and apply lessons learned to larger NEVI formula funding rollout.
- Will invest in 25 EV charger sites in 7
 counties. Four private EV companies
 participated in the grant, providing the
 local cost shares for repair/replacement
 projects on their networks.
- Grant will create six new Alternate Fuel Corridor (AFC) compliant sites.





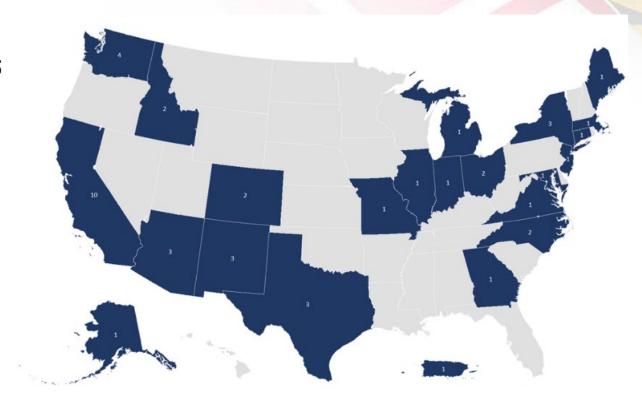
Announcements

Charging and Fueling Infrastructure Program Grant (CFI) Awards

\$622 Million in CFI grants were awarded to 47 applicants in 22 States and Puerto Rico.

Maryland Clean Energy Center (MCEC) awarded \$15 million, for: Maryland Equitable Charging Infrastructure Partnership (MECIP) – Community Component.

 The grant provides funding for the construction on 58 new EV charger sites and workforce development activities. For community sites only.





Announcements - MDE

Electric and Low-Emission School Buses for Montgomery County

US EPA Clean School Bus Program awarded \$1 billion in funding for more than 2,700 electric and low-emission school buses across 37 states. In Maryland, Montgomery County Public Schools will receive nearly \$4.7 million to purchase 50 new buses.

See MDE Presentation on School Bus Funding (December 2023)





Announcements

Baltimore Metropolitan Council (BMC) is launching a new project: Electric Vehicle Community Charging Hubs for Multi-Unit Dwellings in the Baltimore Region

 BMC is looking for key stakeholders to join the Steering Committee, from jurisdictions within the Baltimore Region (Anne Arundel County, Baltimore County, Baltimore City, Carroll County, Harford County, Howard County, and Queen Anne's County).

Brief Project Overview: The consultant will provide guidance to jurisdictions to best serve their constituents who live in housing without private driveways or garages. BMC will work with the consultant and the Steering Committee to determine locations and EV Charging needs, at least one per jurisdiction. The Steering Committee will have three meetings, anticipated to take place in April, July, and November.

Please contact Anna Marshall, Environmental Planner, BMC, at <u>amarshall@baltometro.org</u> with questions or input.



Public Comments

2024 Legislative Session

ZEEVIC Members Delegate Fraser-Hidalgo and Delegate Love Josh Cohen, ZEEVIC Legislative WG – Chair

Summary of Bills Reviewed

- HB 0064 Motor Vehicle Excise Tax Tax Credit for Electric Vehicles Eligibility
- HB 0159 Common Ownership Communities Electric Vehicle Recharging Equipment (Electric Vehicle Recharging Equipment Act of 2024)
- HB 0150 Vehicle Emissions Inspection Program and Diesel Vehicle Emissions Control Program – Fees and Fines
- **HB 0130 / SB 0258** Department of General Services State Buildings and Facilities Energy Conservation and Greenhouse Gas Emissions Reductions
- HB 0156 Transportation Electric Bicycle Rebate and Voucher Program -Establishment



Motor Vehicle Excise Tax – Tax Credit for Electric Vehicles – Eligibility

Sponsors: Delegate Jazz Lewis

Hearing Date: Thursday 2/1

Synopsis: Altering eligibility for the vehicle excise tax credit for the purchase of certain electric vehicles to include certain vehicles purchased used and titled on or after July 1, 2024, but before July 1, 2027.



Common Ownership Communities – Electric Vehicle Recharging Equipment (Electric Vehicle Recharging Equipment Act of 2024)

Sponsors: Delegate Marc Korman

Hearing Date: Tuesday 2/6

Synopsis: Altering requirements for procedures relating to electric vehicle recharging equipment to include electric bicycles; establishing requirements and procedures relating to an application to the governing body of a cooperative housing corporation to install or use electric vehicle recharging equipment; and requiring the Department of Housing and Community Development to publish certain information on its common ownership community website.



Vehicle Emissions Inspection Program and Diesel Vehicle Emissions Control Program – Fees and Fines

Sponsors: Delegate David Fraser-Hidalgo

Hearing Date: Thursday 2/1

Synopsis: Establishing a recurring fee on each motor vehicle registered in the State that is granted a waiver from, exempted from, or not subject to the Vehicle Emissions Inspection Program and on certain diesel vehicles; requiring the fee to be deposited in the Maryland Strategic Energy Investment Fund and used to provide incentives to expand electric vehicle ownership and to expand electric vehicle infrastructure; etc.



HB 0130 / SB 0258

Department of General Services – State Buildings and Facilities – Energy Conservation and Greenhouse Gas Emissions Reductions

Sponsors: Chair, Environment and Transportation Committee (Departmental – DGS)

Hearing Date: Wednesday 1/31

Synopsis: Altering the State's goals for reducing energy consumption in State buildings; requiring the Maryland Green Building Council to update the High Performance Green Building Program to ensure that the Program aligns with certain greenhouse gas emissions reduction goals; requiring the Department of General Services to identify Stateowned facilities that are potential candidates for energy performance contracts; etc.



<u>Transportation – Electric Bicycle Rebate and Voucher Program - Establishment</u>

Sponsors: Delegate Robbyn Lewis

Hearing Date: Thursday 2/8

Synopsis: Establishing the Electric Bicycle Rebate and Voucher Program to provide rebates and vouchers for qualified individuals who purchase electric bicycles and related items; requiring the Governor to include in the budget bill an appropriation of \$100,000 for the Program; and requiring a report to the General Assembly by December 31, 2026 and each December 31 thereafter on demographic, geographic, and income data on individuals receiving a rebate or voucher, information on participating retailers and a breakdown of covered items.



PSC Orders Related to Electric Vehicles

Ben Baker, Maryland PSC- Senior Commission Advisor

Recent Commission Orders Related to Electric Vehicles

• Order 90971 – EV Charging Station Reliability and Reporting Standards

- Accepted consensus proposals and decided the non-consensus items.
- Utilities file first reports Feb. 9, 2024.

Order 90984 – EV Demand Charge Relief Program

- Denied proposed tariff. In future much have clear demonstration of need in alignment with State goals, consider fairness to other customers and benefits to off-peak charging. Utilities may file revised proposals after addressing Commission concerns.
- Directed Utilities to develop MUD rate design proposals that are more conducive to residential customers within the next 6 months.
- All proposals must be vetted through PSC EV WG.

Letter Order – BGE EV Program Phase II

- Took no actions on new program requests, will consider these after the Phase I evaluation
- Allowed BGE to continue several current offerings until Phase I evaluation complete subject to available budget. Will consider program modifications during Phase I evaluations.

Order No. 90948 - BGE MYP II

- PSC EV WG must reexamine EV BCA methodology
- Letter Order School Bus Pilot
 - Deferred decision on BGE's proposal until other interested utilities have submitted proposals and current legislative session concludes.



Market Research Report -Understanding Marylanders' Perceptions Towards Electric Vehicles

Bryan Duff, Sensis – Research Director



Market Research Report

Understanding Marylanders' perceptions towards electric vehicles

Bryan Duff, Sensis – Research Director

SENSIS

www.sensisagency.com

TABLE OF CONTENTS

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- How incentives and rebates influence vehicle purchases
- Marylanders (compared to the U.S. overall)
- Marylanders by car segment
- Summaries and takeaways
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- Next: Primary research



SYNDICATED RESEARCH Introduction to MRI-Simmons



We used the MRI-Simmons database to identify the target audience's behaviors and attitudes to build a more accurate profile of the audience we are studying. For the segments we study, the likelihood of a certain behavior or attitude is calculated in comparison to other populations.



MRI-Simmons is the largest source of market research information in the United States. It is nationally-representative, multi-modal, and used by a wide range of industries to inform business decisions, build consumer profiles, and plan media.



Fall survey collected from 9/1/2022 to 10/16/2023

- **51,480** total respondents across the contiguous United States
- 797 respondents in Maryland who bought a car within past 3 years



Segment	Number of respondents
Compact	148
Standard	151
Luxury	70
SUVs/Vans	334
Pickups	75
EVs	19*

*Estimates should be interpreted with caution!



Index score: What percentages mean

The likelihood of the target to meet a specified criterion, expressed in relation to the base, where 100 = average.

(Weighted % of target / Weighted % of base) * 100 = Percentage - 100

For example...

(94.37% of Marylanders have a household income of at least \$199,000 / 30.99% of all Americans have a household income of at least \$199,000) * 100 = 304 - 100 =

Marylanders are 204% more likely to have a household income over \$199,000



How incentives and rebates influence vehicle purchases



MD EV owners were slightly influenced by rebates and incentives

MARYLANDERS

	Percent of all U.S.	Percent of Marylanders	Percent of Maryland EV owners
Agree that "Rebates and incentives strongly influence my new vehicle purchase decisions"	48%	64%	54%
Index score to U.S.	_	8%	+12%
Index score to Marylanders		_	5%

According to MRI-Simmons, Maryland residents who own EV's were **12% MORE** influenced by rebates and incentives than the U.S. overall, and 5% MORE influenced by these than other Maryland residents.

Discussion follows, but results should STILL be interpreted with caution.

Rebates by segments

MARYLANDERS

	Percent of all U.S.	Percent of Marylanders	Percent of Maryland Compacts	Percent of Maryland Standards	Percent of Maryland Luxuries	Percent of Maryland SUV/Vans	Percent of Maryland Pickups
Agree that "Rebates and incentives strongly influence my new vehicle purchase decisions"	48%	64%	54%	53%	37%	49%	45%
Index score to U.S.	-	8%	+11%	+10%	-23%	+1%	-7%
Index score to Marylanders		_	+5%	+4%	-28%	-5%	-12%

SYNDICATED RESEARCH Marylanders (compared to the U.S. overall)



Demographics: well-off and actively progressive

MARYLANDERS TO THE U.S. OVERALL

- 101% more likely to have a total household income over \$100,000
- 19% less likely to believe their household will be worse off financially in the next 12 months
- 46% more likely to be Democrats
- 81% more likely to work for a political party

	United States	Maryland
Bachelor's degree or higher, percent of persons aged 25 and older, 2017- 2021	33.7%	41.6%
Median household income (in 2021 dollars), 2017-2021	\$69,021	\$91,431
Percent in poverty	11.5%	9.6%
Source:		

Source

https://www.census.gov/quickfacts/fact/table/US,MD#

Inclined to newer models

MARYLANDERS TO THE U.S. OVERALL

Marylanders are	% More/ <mark>less</mark> likely
I normally buy cars brand new	21%
I generally purchase the most expensive model with all the luxury appointments and options	25%
The technologies offered in a car's dashboard influence my decision to buy it	15%
Buying a self-driving car is something I would like to do as soon as possible	-11%
I like to get a new car every two or three years	-14%

...Otherwise, Marylanders have very average attitudes towards automobiles

Purchased with financing, through a provider

MARYLANDERS TO THE U.S. OVERALL

Marylanders' most recent car was more likely to be acquired...

From a manufacturer or dealer	17%
From a retailer (e.g. CarMax, AutoNation, etc.)	24%
With financing from a dealer	17%
With a bank loan	16%
With financing from the auto manufacturer	33%
Marylanders' most recent car was less likely to be acquired	
In a private sale/Individual	-46%
·	
On a lease	-11%
On a lease From an independent used car dealer	-11% -24%

SYNDICATED RESEARCH Marylanders by car segment

EV estimates should be interpreted with caution!



Automobile attitudes

Cars are a	
Compact: Necessary evil	 22% more likely to agree that owning a car is less important nowadays given the other options for getting around 12% less likely to have a vehicle that is fun to drive
Standard: Hobby	 25% more likely to consider themselves to be automotive enthusiasts 18% more likely that people ask their advice when it comes to automobiles 15% more likely to perform the routine maintenance on their cars
Luxury: Status symbol	 40% more likely to seek out vehicles with bold, innovative designs that stand apart 14% less likely to look at several vehicle brands when shopping for a new vehicle
SUVs/Vans: Fact of life	 16% more likely to drive mostly for errands 13% less likely to agree that owning a car is less important nowadays given the other options I have for getting around
Pickups: Lifestyle	 22% more likely to like driving 19% more likely to agree that buying American products is important 16% more likely to agree that the quality of workmanship/construction of a vehicle is more important than anything else
EVs: Fun, new thing	 53% more likely to keep up on the latest advances in automobile technology 24% more likely to be interested in what goes on under the hood of a car

Demographics and key characteristics

Segment	
Compact	 Single: 35% more likely to have never married, 27% more likely to have no children Younger: 23% more likely to be 18-49 More male: 12% more likely to be men
Standard	 Very typical to Marylanders demographically Drive the least
Luxury	 Married: 40% more likely to be married Wealthy: 256% more likely to earn \$250,000+ Educated: 39% more likely to have college degrees Diverse: 26% more likely to be Black/African American
SUVs/Vans	 Highest and lowest incomes 33% more likely to have some college, but no degree
Pickups	 Conservative: 34% more likely to be White, 98% more likely to be Republican 21% more likely to be parents
EVs	 60% more likely to be male 28% more likely to be White and 120% more likely to be Asian 80% more likely to have graduate degrees 77% more likely to be Republican (120% more likely in last round)

How each segment typically purchased their car

Segment	
Compact	 13% more likely to buy-in-person and pickup in-person 16% more likely to buy used
Standard	 57% more likely to buy with trade-in 45% more likely to use dealer financing 36% more likely to agree that leasing is a great way to try new cars 27% more likely to buy new 17% less likely to buy with cash
Luxury	 319% more likely to buy online and pickup in-person 107% more likely to buy online and have delivered 19% more likely to use cash
SUVs/Vans	 25% more likely to buy with trade-in 41% more likely with credit union loan
Pickups	 17% more likely to buy-in-person and pickup in-person (98% of segment!)
EVs	 10% more likely to buy in-person and pickup in-person (73% of segment!) 88% more likely to buy new (84% of segment)

Some segments are concerned about cars' environmental impact...

Segment	
Compact	 12% more likely to agree that buying an electric/hybrid car is the right thing to do to protect the environment
	• 13% more likely to agree that their next car will be more eco-friendly
	 21% more likely to buy vehicles that reflect their commitment to support the environment
	 21% more likely to buy a brand that is committed to reducing its impact on the environment
EVs	 23% more likely to agree that buying an electric/hybrid car is the right thing to do to protect the environment

...but others are not concerned

Segment	
Pickups	 23% less likely to agree that buying an electric/hybrid car is the right thing to do to protect the environment
	 13% less likely to buy vehicles that reflect their commitment to support the environment
EVs	 41% less likely to buy vehicles that reflect their commitment to support the environment
	 57% less likely to buy a brand that is committed to reducing its impact on the environment
	• 39% less likely to expect brands they buy to support social causes.
Luxury	 No variation (to MD or U.S., no variation from MD to U.S.)
SUVs/Vans	 No variation (to MD or U.S., no variation from MD to U.S.)

SUMMARY KEY FINDINGS AND TAKEAWAYS



Concluding thoughts

MARYLAND AND EVS

- While MRI-Simmons may not be the best source of information on Maryland EV owners (hence our literature review), we do learn a lot about Marylanders and the other car segments.
- A Marylander's car says a lot about their background, behaviors, and attitudes, towards EVs.
 - The following car segments in Maryland are easier sells for EV ownership...
 - Compacts prioritize environment, purchase in person (opportunity to try an EV), skew male, not particularly attached to their existing car, open to rebates/incentives
 - Standard open to rebates/incentives and other alternative financing, car enthusiasts who might just need to see how EVs could be the next big thing, most typical to Marlyanders overall (see below)
 - SVU/Vans drive for practical reasons only, no serious aversions to EVs
 - Whereas the following car segments in Maryland are harder sells for EV ownership...
 - Luxury though demographically aligned, they consider a very narrow range of brands/models and purchase online
 - Pickups politically averse, 18% less likely to trust advertising, 900% more likely to need a vehicle for hauling power
- Marylanders overall seem (more) amenable to EV's, meaning there should be room to grow this segment.
 - 51% of Americans agree that buying an electric/hybrid car is the right thing to do to protect the environment (55% in MD)
 - 32% of Americans buy vehicles that reflect their commitment to support the environment (34% in MD)
 - 54% of Americans agree that their next car will be more eco-friendly (60% in MD)
 - 48% of Americans agree that rebates and incentives strongly influence their new vehicle purchase decisions (51% in MD)
 - All figures are virtually the same as in 2021 (within |2%|)

SECONDARY RESEARCH Literature review

Pre-existing research on EV adoption in Maryland



Summary & Recommendations

- Purchasing an EV is a complex decision for Marylanders. Most research focused on logical/practical factors that impact consumer behavior. However, research also showed that the decision to buy a car tends to be more irrational and emotional, but those details were lacking for EV purchases.
 - Future research should explore emotional factors that impact purchasing an EV.
- Rebate and incentive perceptions of Marylanders have not been well researched.
 - Future research should explore these and how they may have evolved.
- Maryland EV owners tend to skew more male (85%), older (ages 40-69), higher income (81% over 100K), and more educated (86% of EV owners have at least a college degree). Research revealed the gender gap as the most salient.
 - Future research should explore the values and experiences of women in Maryland as this would be the most promising target audience.

Based on a review of 11 publications from 2018-2023

NEXT: PRIMARY RESEARCH In-depth interviews

Overview



Our own qualitative research

NEXT STEPS FROM US

- What: In-depth interviews
- Why: To inform MarylandEV's outreach by understanding how Maryland EV and non-EV owners relate to their cars, how they perceive EVs (and how those perceptions have changed), and the shared values of Marylanders
- How: 20-30 minute online (or phone) interviews
- Example questions:
 - What made you buy your most recent car?
 - o Is there anything that might motivate you to want to buy an electric vehicle as your next car?
 - How would you generalize your area of Maryland? Can you describe the typical person that lives there?
 - What do you feel like buying an electric car says about a person?
- Who: 25 Marylanders who acquired a car (either used or new) since 2020
 - o 10 EV owners, 15 non-EV owners, at least 50% female
- How You Can Help: Please let us know if you or anyone you know are interested. We are offering a small electronic gift card as a token of our appreciation, for both referrals and interviews!

THANK YOU!

Bryan Duff
Sensis - Research Director
bduff@sensisagency.com



MEA FY 2024 Grant Programs and Rebates

Eric Coffman and Natalie Buscemi, Maryland Energy Administration (MEA)

Maryland Energy Administration

Transportation Programs Update



MEA Clean Transportation Program Introduction

- Focus entirely on ZEVs and ZEV infrastructure
- Rebates for electric vehicle charging infrastructure for residents, businesses, and workplace charging
- Grants for Medium-Duty and Heavy-Duty Zero-Emission Vehicles (MHD ZEV)
- Integration of charging infrastructure into clean energy and resilience programs
- Evaluating options for multi-family and community charging for overburdened and underserved communities



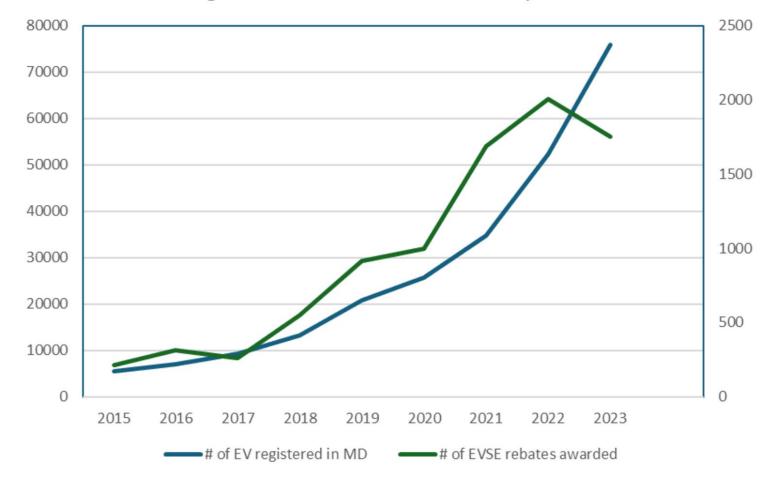


- The Maryland Energy Administration has offered the EVSE program since FY2015.
- Since 2015, MEA has issued over 9,500 EVSE rebate awards
- Awards are a mix of residential and commercial rebates, commercial awards may include multiple charging ports serving more than one parking space
- FY24/FY25 statutorily defined budget = \$2,500,000

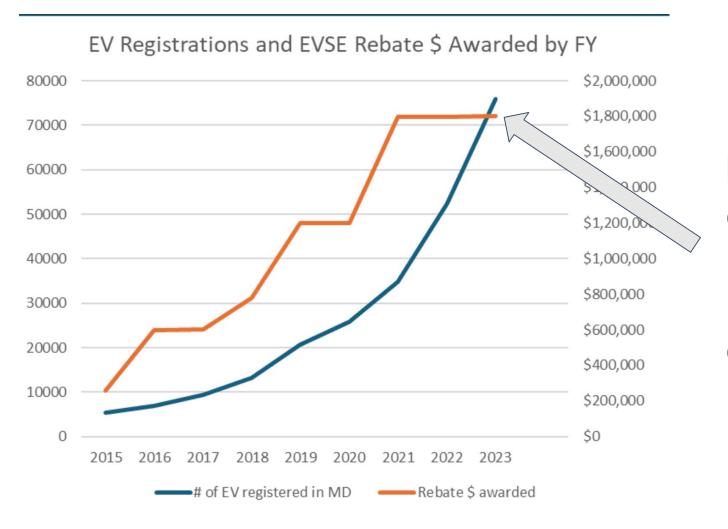












FY23 Statutory budget cap @ \$1.8M

FY24/25 cap @ \$2.5M



- Demand will continue to increase as EV share of the market increases
- Over 29,700+ new EV and plug-in hybrid registrations in the last year from October 2022 to October 2023 alone
- Program resources unable to scale to meet demand
- Percentage of Rebates to communities that are both overburdened and underserved
 - Commercial Projects = 48%
 - Residential (estimated based on sample) = 7%





Medium-Duty and Heavy-Duty Zero-Emission Vehicle Grant Program (MHD ZEV)

- Applies to vehicles and off road equipment intended for commercial and industrial use
- Newly manufactured
- Greater than 10,000 pounds gross vehicle weight (may differ for off-road equipment)
- Powered by electricity stored in a battery or a fuel cell
- Grant incentive of up to 75% of the incremental cost between a conventional vehicle and a zero-emission vehicle





Medium-Duty and Heavy-Duty Zero-Emission Vehicle Grant Program (MHD ZEV)

- MEA has historically received significant interest in MHD ZEV vehicles. Recent examples include:
 - Sysco (Jessup, Maryland) \$2,800,000 for 18 class 8 electric tractors and trailers dispatched out of Jessup.
 - Chaney Enterprises: \$900,000 for 6 electric concrete mixers.
 - Grants for electric school buses slated to serve four school districts:
 - Anne Arundel
 - Montgomery County
 - Washington County
 - Baltimore County





Other Programs that Benefit Electric Vehicles and Infrastructure

- Maryland Smart Energy Communities (MSEC)
 Program
 - Funded electric buses, fleet vehicles and similar efforts.
 - (NEW) Pilot Community and Economic
 Development subprogram focusing on
 comprehensive community based clean energy
 initiatives which may include expanding electric
 vehicle charging.





Other Programs that Benefit Electric Vehicles and Infrastructure

- OPEN Energy Program MEA's innovation program for activities that do not fit in other sector or technology programs. Funded projects include
 - Curbside EV charging in Montgomery County
 - Hybrid/Electric ambulance conversions
 - Electric fishing boat demonstration/pilot project





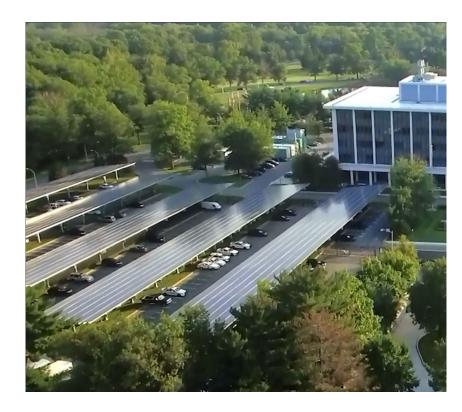
Other Programs that Benefit Electric Vehicles and Infrastructure

Resilient Maryland - Funding for microgrid and resilience hub projects. Projects often support ZEV infrastructure.

 Montgomery County Equipment Maintenance and Transit Operations Center (EMTOC). Supports electric vehicles as well as the largest deployment of hydrogen buses on the East Coast.

Solar Canopy and Dual Use Program

- Requires charging stations with solar canopies
- Montgomery County Brookville Depot and Public Safety Headquarters (PSHQ) - Funded a portion of canopy solar supporting a transportation centric microgrid combining battery energy storage.





Follow-up Questions

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Closing Remarks

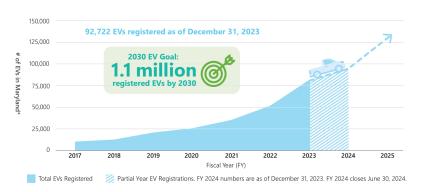
New material posted: Mdot.Maryland.Gov/ZEEVIC

- 2023 Annual Report
- 2023 ZEV Policy Scorecard
- Medium- and Heavy-Duty ZEV Infrastructure <u>Recommendations</u> (Workgroup Report)

Maryland ZEV Policy Scorecard

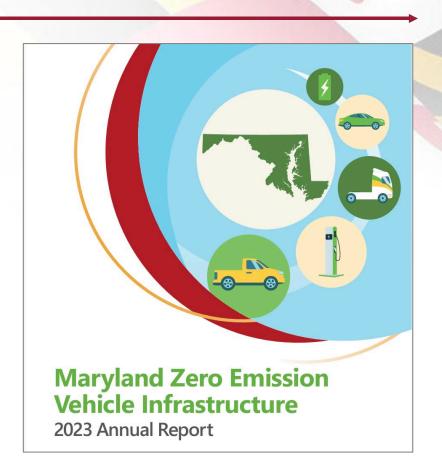


The Climate Solutions Now Act (CSNA) established a target of 60 percent reduction in greenhouse gas (GHG) emissions by 2031. Because transportation is the largest GHG generator in Maryland, representing over one third of total emissions, zero emission vehicles (ZEVs) play an integral role in helping meet Maryland's emissions reduction goal.



^{*} Includes both battery electric and plug-in hybrid electric vehicles.





Closing Remarks

ZEEVIC Meeting Schedule through 2024

- April 24
- July 24
- October 23

To receive ZEEVIC Meeting Notices, email: ZEEVIC@mdot.maryland.gov

