MARYLAND ZERO EMISSION

Electric Vehicle Infrastructure Council

January 12, 2023

Agenda

- Welcome and Announcements
- Public Comments
- 2023 Legislative Session
- Mid-Atlantic Hydrogen Hub Update
- School Bus Electrification
  - *Electric School Bus Pilot Program – BGE Proposal*
  - *Perspectives on Funding – MDE*
- Maryland NEVI Program Updates
- Utility Updates
- MarylandEV and Outreach Updates
- State Agency Updates
- Closing Remarks

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

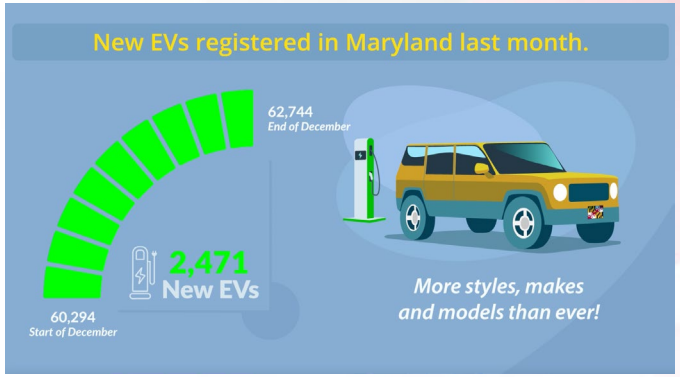
Welcome and Announcements

Deputy Secretary Lewis, MDOT

Announcements

60,294

EVs Registered in Maryland
as of 11/30/22 and 62,744 as of 12/31/22



According to the National Resources Defense Council (NRDC), More than a Quarter million EVs were sold in the US in 2022.

The *U.S. National Blueprint for Transportation Decarbonization* is a first-of-its-kind strategy for federal leadership and partnerships to decarbonize the entire U.S. transportation sector.

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

Maryland EV in the News

Delivery Services in Maryland are Transitioning to EVs

- Giant Food: Two electric delivery step-vans placed into service in 2022
- Amazon: Baltimore was 1 of 23 cities chosen to make deliveries with new EVs
- Domino's: Will have 10 MD delivery EVs by the end of 2023
- USPS: Announced intent to deploy over 66,000 EVs by 2028

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

Public Comments

2023 Legislative Session

Delegate David Fraser-Hidalgo

Kevin Miller, ChargePoint

David Proctor, Sharp & Company

2023 Legislative Session

Bills Introduced - Summary

Bill #	Bill Title	Status
HB0007	Electric Vehicle Recharging Equipment Rebate Program – Renewal	1St Reading Referral to CMTE
HB0101	Condominiums - Common Elements - Clean Energy Equipment	1St Reading Referral to CMTE
HB0123	Vehicle Laws – HOV Lanes – Plug–In Electric Drive Vehicles	1St Reading Referral to CMTE

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

Mid-Atlantic Hydrogen Hub Update

Mid-Atlantic Hydrogen Hub

- The Mid-Atlantic Hydrogen Hub (MAHH) submitted its Concept Paper to the US Department of Energy (US DOE), pursuing federal funds from the 2021 Bipartisan Infrastructure Investment and Jobs Act (IIJA) to support the region's clean energy transition. (Nov 14, 2022)

- Proposed by Connected DMV, the MAHH has support from a cross-sector coalition of more than 40 partners representing Washington, D.C., Maryland and Virginia. The coalition includes community organizations, utilities, energy producers, hydrogen technology providers, national labs, colleges and universities, and groups focused on innovation, environmental justice, and workforce development.

- Of 79 submissions, MAHH was among 33 invited to advance a Regional Hydrogen Hub application by April, 2023.

- US DOE Regional Clean Hydrogen Hubs program–or H2Hubs–includes up to $7 billion to establish 6 to 10 regional clean hydrogen hubs.

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

Contact:
Matt Erskine, Connected DMV,
MattErskine@connecteddmv.org

Electric School Bus Pilot Program

Samuel Dupont, BGE

Jennifer Hendrick, BGE

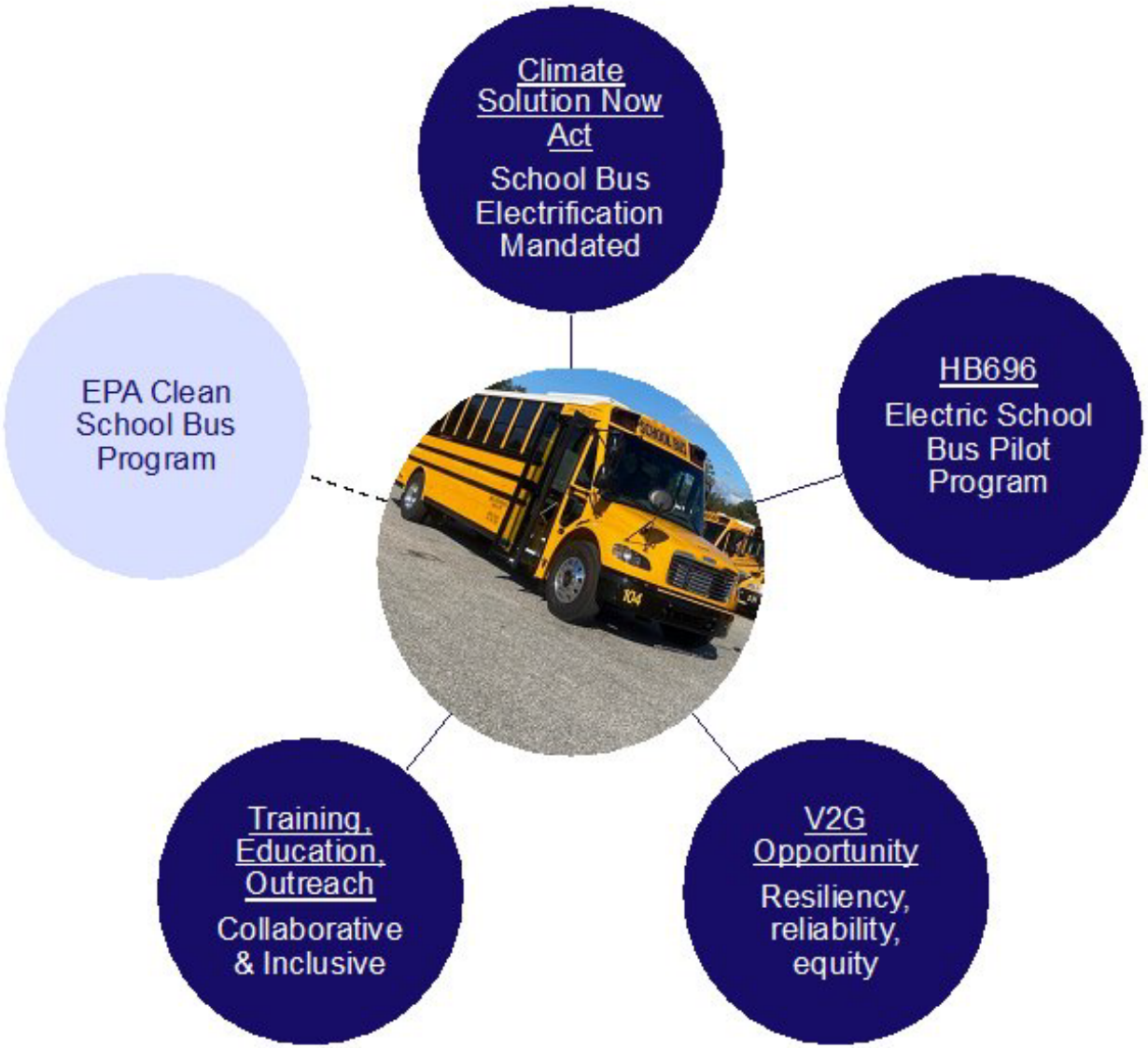
bge℠
AN EXELON COMPANY

BGE Electric School Bus Pilot Program – DRAFT Proposal

Short Summary

Samuel.duPont@bge.com
Jennifer.Hendrick@bge.com

Introduction and key discussion points



Balancing Urgency & Prudence

- Planning in Advance à to ensure buses can begin service upon delivery & grid remains reliable
- Recognizing legislative mandates à move as quickly as possible without sacrificing quality of execution

Strategic Deployment

- Maximize program flexibility to work with applicants who may be in varying stages of technology adoption
- Recognizing that supply chain realities indicate that bus and infrastructure availability is not immediate
- Recognizing that technology options will evolve and improve over time

Rebate Structure: Bus, EVSE, Make Ready, Administrative

Bus Rebate

- Rebate 100% of incremental cost increase between fossil fuel powered bus and EVSB
- Rebate indexed to type of Bus (Type C vs Type A)
- Requirement for bidirectional power flow capability
- Requirement for utility access to battery capacity when not in use transporting students
- Rebate fixed dollar amount indexed to market pricing – as of Dec. 2022
  - Type C as proposed: $245,000/unit
  - Type A as proposed: $215,000/unit

Type A

Electric Vehicle Service Equipment (Charger) Rebate

- Rebate covers up to 100% of charging system cost
- Requirement for Bidirectional power flow (V2G) capability
- Focus on Level 3 DCFC but inclusive of Level 2 AC
  - Level 2 unlikely to serve needs of school systems, but technology could be developed within the timeframe of this program

Make-Ready Installation Rebate

- Rebate covers up to 100% of make ready cost, both line side and customer (load) side

General & Administrative Incremental Cost Rebate

- Up to 5% of the total rebate award
- Demonstrable G&A cost to support EV transition
  - Examples: Driver/Mechanic training, IT support

Type C

Case Example: Type C School Bus Rebate

$120K	• Approx Fossil Fuel Type C Bus Retail Cost
$365K	• Approx EV Type C Bus Retail Cost
$245K	• Approx Incremental cost for Type C EV Bus
100%	• Target Max Rebate %
$245K	• Approx Max Rebate $ (Prescriptive Dollar figure)

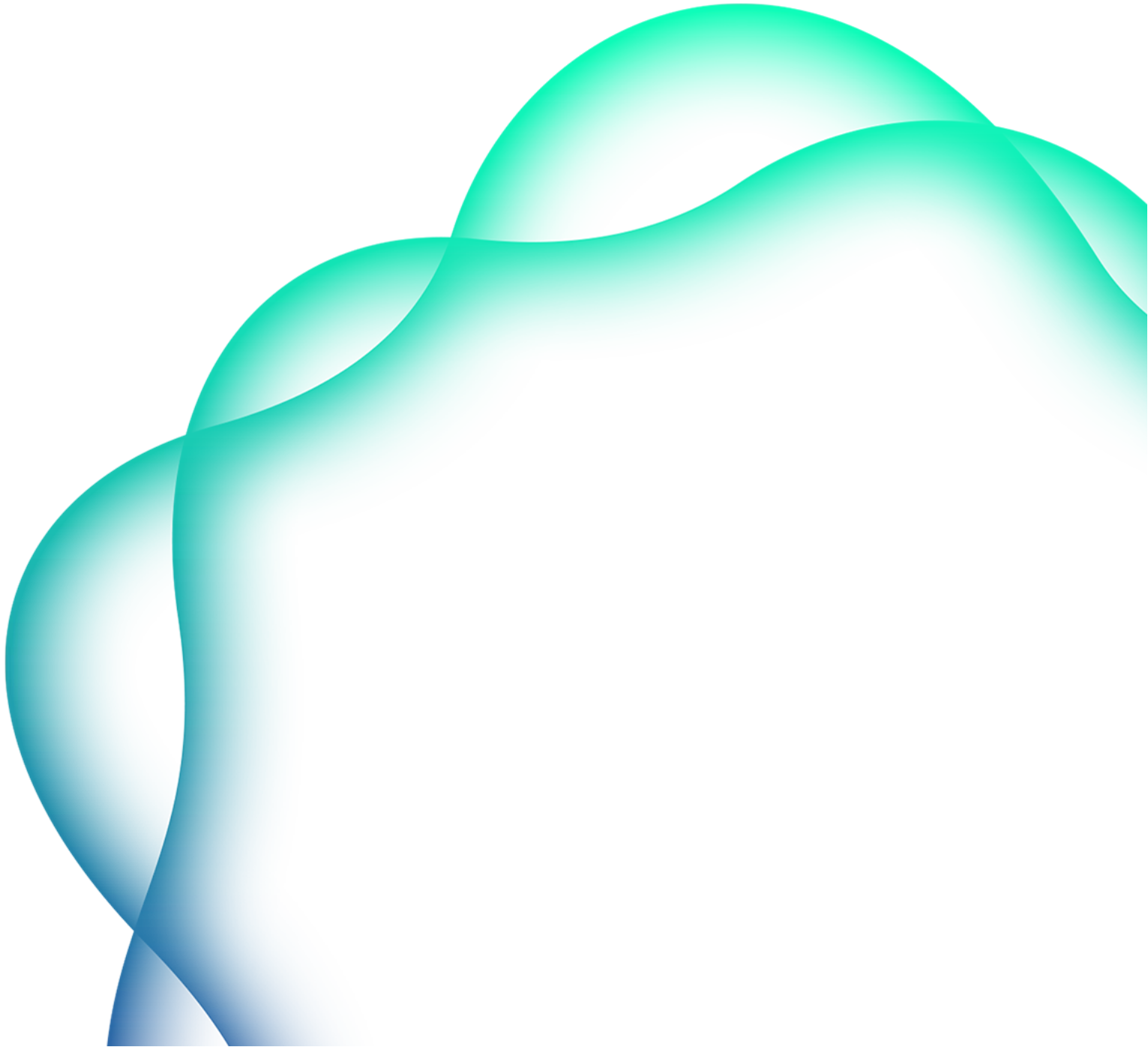
Type C

Talking Point Summary – BGE Electric School Bus Proposal

- **Proposal based on 2022 Maryland authorizing legislation, a provision of *Climate Solutions Now Act***
  - **Recognizes that other provision of *Climate Solutions Now Act* requires all new school buses to be EV after July 2024**
- **Provides up to $50mm in BGE-funded rebates to cover the incremental cost of an electric school bus vs. a fossil-powered unit**
- **Provides other rebates for make-ready and charging infrastructure**
- **Creates foundation for Vehicle-2-Grid construct by requiring buses and chargers to have bidirectional power flow capability**
- **Utility will be able to use latent battery capacity for V2G benefits during time periods when buses aren't required for student transport**
- **BCA currently in process**
- **Significant stakeholder support**
- **Target goal of 20% of program funds to underserved areas**
- **Recovery over 5 years with full return**

bge℠
AN EXELON COMPANY

Thank you



School Bus Electrification

Perspectives on Funding

Tim Shepherd, MDE

Maryland
Department of the Environment

Electric School Buses

January 12, 2023

Tim Shepherd, MDE

Electric School Buses

- Background
- EPA Clean School Bus Program
- MDE’s Experience under VW Program
- Climate Solutions Now Act of 2022
- PSC/Utilities Electric School Bus Pilot Program

Why Electric School Buses

- Medium-Heavy diesel trucks represent one of the largest emitters of PM fine
- PM fine can cause significant respiratory problems. Children and people with existing respiratory issues, such as asthma, are particularly at risk
- Medium and heavy-duty trucks represent the second largest contributor to both CO2 and NOx in the state.
- The majority of Maryland is still in non- attainment for ground level ozone, and Maryland is the fourth most vulnerable state to the effects of sea level rise
- In order to achieve both our CO2 and NOx goals we will need significant reductions from the medium and heavy-duty sector.
- Maryland has between 8,000 to 10,000 public and private school buses operating in the state
- School buses make up one of the largest medium-heavy fleets in the state

EPA Clean School Bus Program

- Bipartisan Infrastructure Law (BIL) provides **$5 billion** over five years (FY22-26) for the replacement of existing school buses with clean school buses and zero-emission school buses.
- School districts applying directly for funds may only submit one application to replace up to 25 buses
- Eligible technologies include battery-electric, CNG and propane
- Funding varies:
  - Electric: $190,000 to $375,000
  - CNG/Propane: $15,000 to $45,000

EPA Clean School Bus Program

- Buses eligible for replacement must be **2010 or older diesel-powered school buses** that will be scrapped if selected for funding.

OR

- If a fleet has no eligible 2010 or older diesel school buses and is requesting zero-emission school bus replacements, the fleet can either:
  - Scrap 2010 or older non-diesel internal combustion engine buses; or
  - Scrap, sell, or donate 2011 or newer internal combustion engine buses

EPA Clean School Bus Program

- Who is Eligible?
  - State and local governmental entities responsible for providing bus service
  - Nonprofit School Transportation Associations
  - Eligible Contractors
  - Indian Tribes, Tribal Organizations, or tribally controlled schools
  - Private School Districts

Maryland/VW Program

- Currently funded six electric school buses located in four counties(Frederick, Howard, Montgomery and Prince George's)

- Lessons learned:
  - Work closely with Utilities
  - Research Chargers (Level 2 and Level 3)
  - Plan routes (Hills, temperature)
  - Research software costs
  - Fleet managing will be important
  - Anticipate issues so be comfortable with vendors

Maryland/VW Program

- MDE Plans to reopen its VW Electric School Bus Program in calendar year 2023

- Details:
  - Funding will be at least $2 million
  - Covers incremental cost of electric school bus
  - Covers purchase and installation of EVSE
  - Still working on other details

Maryland Climate Solutions Now Act of 2022

- Beginning in Fiscal Year 2025, a County Board of Education may not enter into a new contract for the purchase or use of any school bus that is not a zero-emission vehicle

- The requirements do not apply if:
  - The Department determines that no available zero-emission vehicle meets the performance requirements
  - The County Board is unable to obtain federal state, or private funding sufficient to cover the incremental costs associated associated with the contracting, purchase or use of zero-emission school buses.

Maryland PSC/Utilities Electric School Bus Pilot Program

- Each utility must file plan for review and approval by the Maryland PSC that includes plans for:
  - Rebate program as laid out in the CSNA;
  - Charging and interconnection infrastructure;
  - Training for bus operators and other stakeholders, including schools;
  - Equitable solutions and outcomes

- Program must commence by Oct. 1, 2024, and run 3 to 5 years

- BGE Timeframe:
  - Submit filing – December 2022
  - Request May 2023 launch(?)
  - 5-year program: May 2023 – May 2028

Maryland NEVI Program Updates

Dan Janousek, MDOT

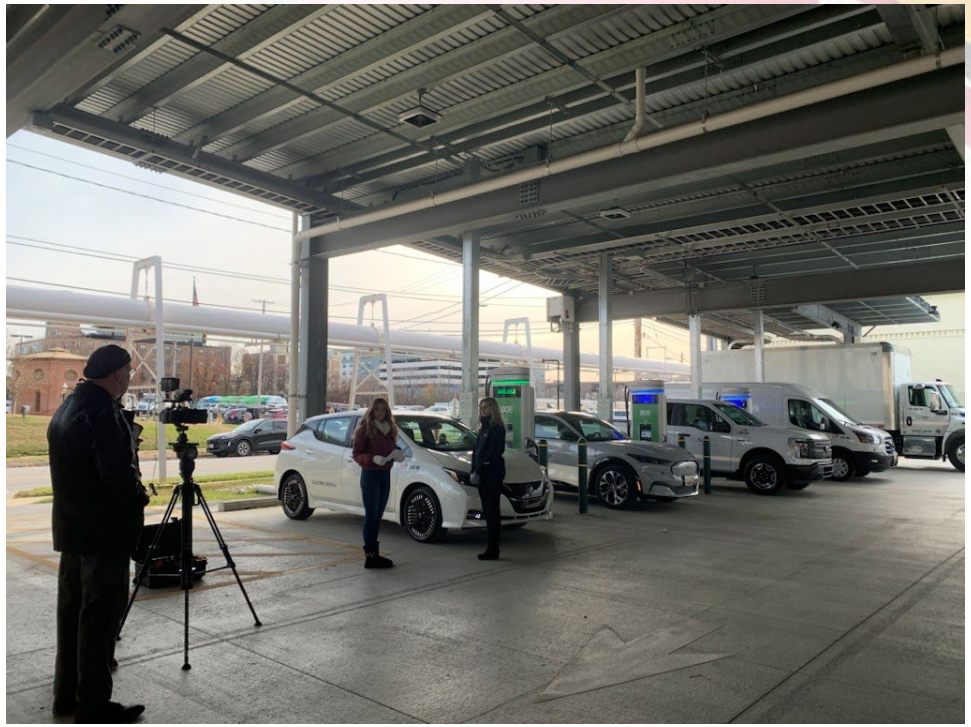
Utility Updates

BGE, PHI, SMECO, Potomac Edison

BGE

EVSE Pilot Program Update

- Residential: 2,546
- Multifamily: 203 ports
- BGE-owned Multifamily: 16 L2s
- Public: 259 live, 137 in progress
- TOU Rate: 1,504 participants
- Fleet program approved 9/14/2022
- Smart Charge Management – LIVE!



Events & Outreach

- Maryland Auto Show – March 10th-12th
- WMAR Steering Change Series

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

PHI – Pepco and Delmarva

MD EVsmart Incentive and Rebate Programs			
Program	Jurisdiction	Program Target	Current Enrollment/Installations
Residential Rebate	Pepco MD	750	750
	DPL MD	250	107
R-PIV TOU Rate	Pepco MD	No Limit	380
	DPL MD	No Limit	7
Residential Plug-in Vehicle TOU (PIV)	Pepco MD	100	47 (11 applicants in review pipeline)
	DPL MD	37	8 (3 applicants in the review pipeline)
Multi-Dwelling (MDU) Incentive	Pepco MD	100	18 (32 ports installed; 39 applicants in review pipeline)
	DPL MD	25	4 (5 ports installed, 4 applicants in review pipeline)
Off Peak/Off Bill Rebate	Pepco MD	250	250
	DPL MD	75	66
Workplace Charger Rebate	Pepco MD & DPL MD	25 total between Pepco & DPL	0
$50 Annual Incentive	Pepco MD	750	0

Events & Outreach

Washington DC Auto Show

January 20-29, 2023

MD EVsmart Public Chargers – In Service			
	L2 Charger	DC Fast Charger	Total
Pepco	145	4	149
DPL	76	8	84
Total	221	12	233

MD EVsmart Pipeline Status – Public Chargers		
	Sites	Chargers
Pre-Construction / In Construction	5	14
Engineering	30	85
Total	35	99

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

PHI - Delmarva

Under the PSC Pilot Program, new chargers have been activated at Park & Ride sites

Kent Island: Stevensville Park & Ride

US 50/MD 8

Queen Anne: Wye Mills Park & Ride

US 50/MD 404, Lot B

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

SMECO Southern Maryland Electric Cooperative

EVSE Pilot Program Update

- 32 EVSE Installed (29 Level 2, 3 DC Fast)

Other Programs

- Filed Residential Rebate, Multi-family, and Managed Charging with MD PSC
- Still pending a decision

Potomac Edison

EVSE Pilot Program Update

- Residential Rebates: 429
- Multifamily: 6
- Public: 24 Level 2, 10 DC Fast Chargers
- TOU Rate: 500 participants

Events & Outreach

- EV Driven Social Media Video Campaign launched on 10/28/22 that will run through March 2023; promotes residential rebates.

MarylandEV Outreach Updates

David Proctor, Sharp & Company

MarylandEV.org Google Analytics

Nov 2022 – Dec 2022

Total Page Views

3,520

% of Total: 100.00% (3,520)

Unique visitors

1,820

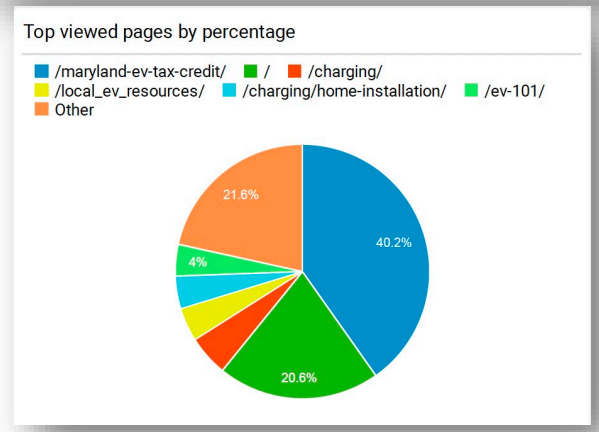
% of Total: 100.00% (1,820)

Avg. Time on Page

00:02:04

Avg for View: 00:02:04 (0.00%)

Top viewed pages by percentage



How do people find you?

Top growing queries

Compared to previous month

maryland ev tax credit 2023
+30 clicks (web)

maryland ev tax credit
+13 clicks (web)

maryland ev incentives
+6 clicks (web)

Top performing queries

Query	Clicks (web)
maryland ev tax credit 2023	71
maryland ev tax credit	42
maryland ev incentives	18

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

Total Page Views

4,233

% of Total: 100.00% (4,233)

Unique visitors

2,235

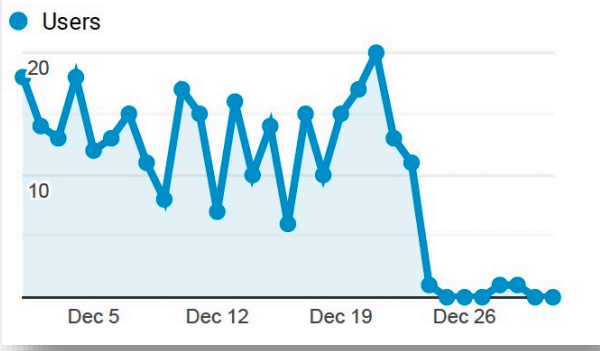
% of Total: 100.00% (2,235)

Avg. Time on Page

00:01:55

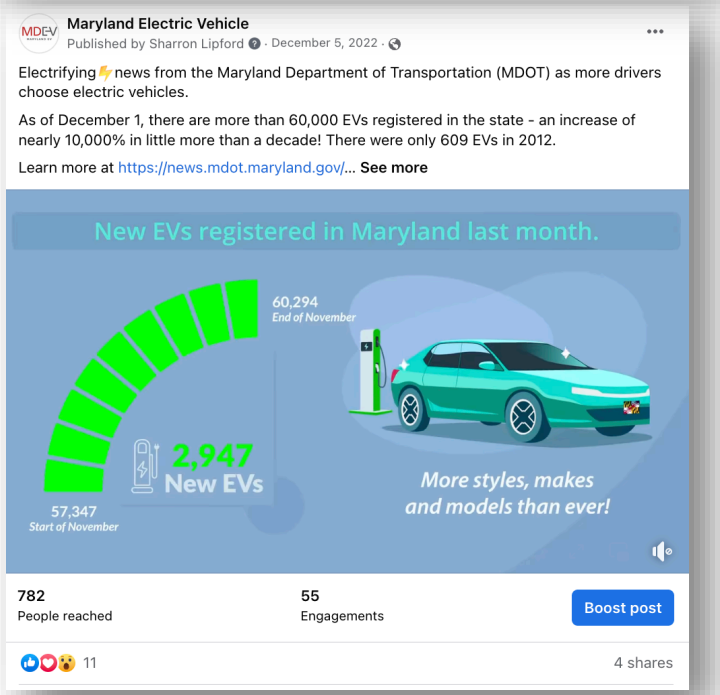
Avg for View: 00:01:55 (0.00%)

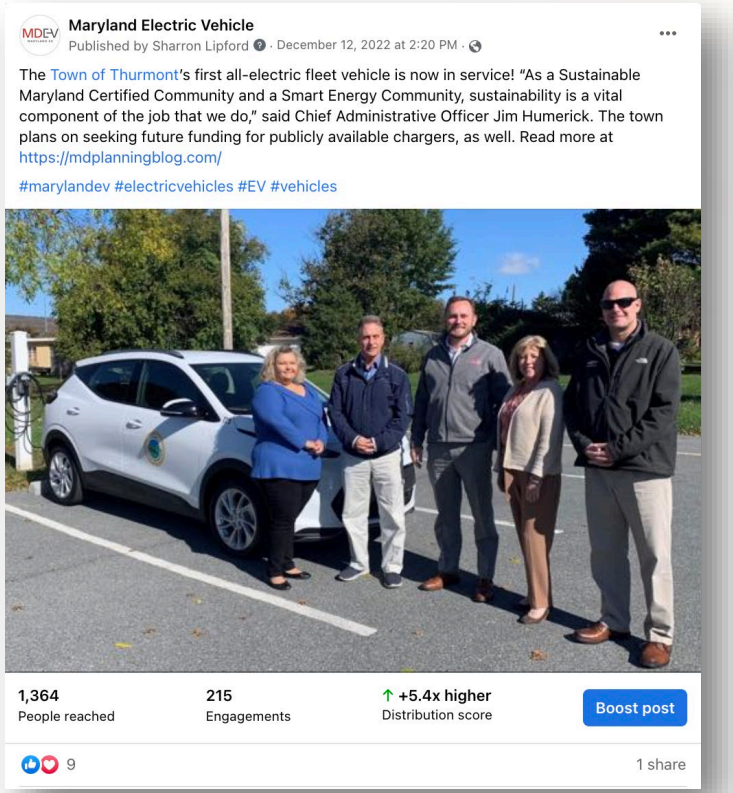
Social media unique visitors

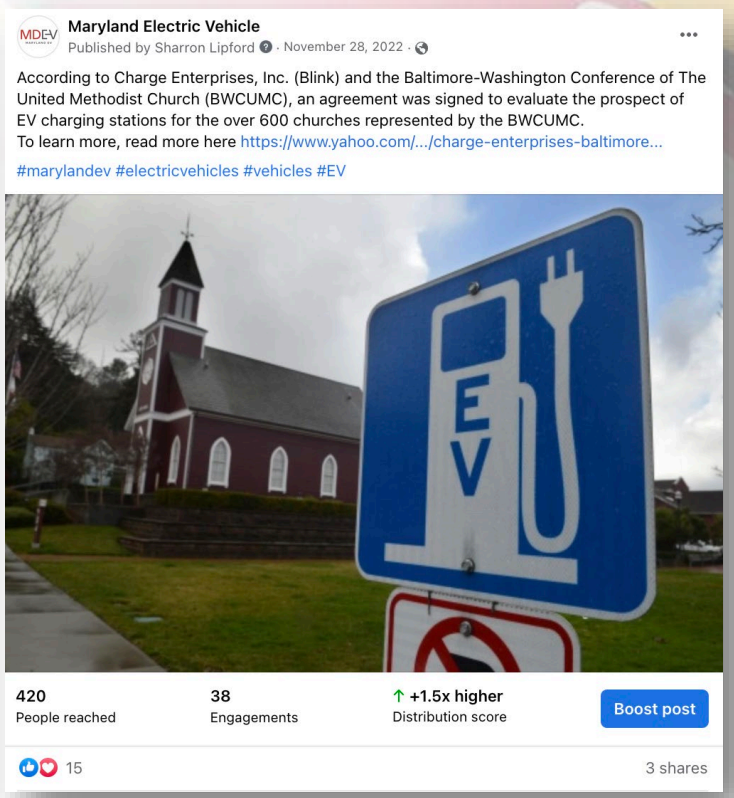


Maryland EV Social Media Post Examples

Dec 2022 – Jan 2023







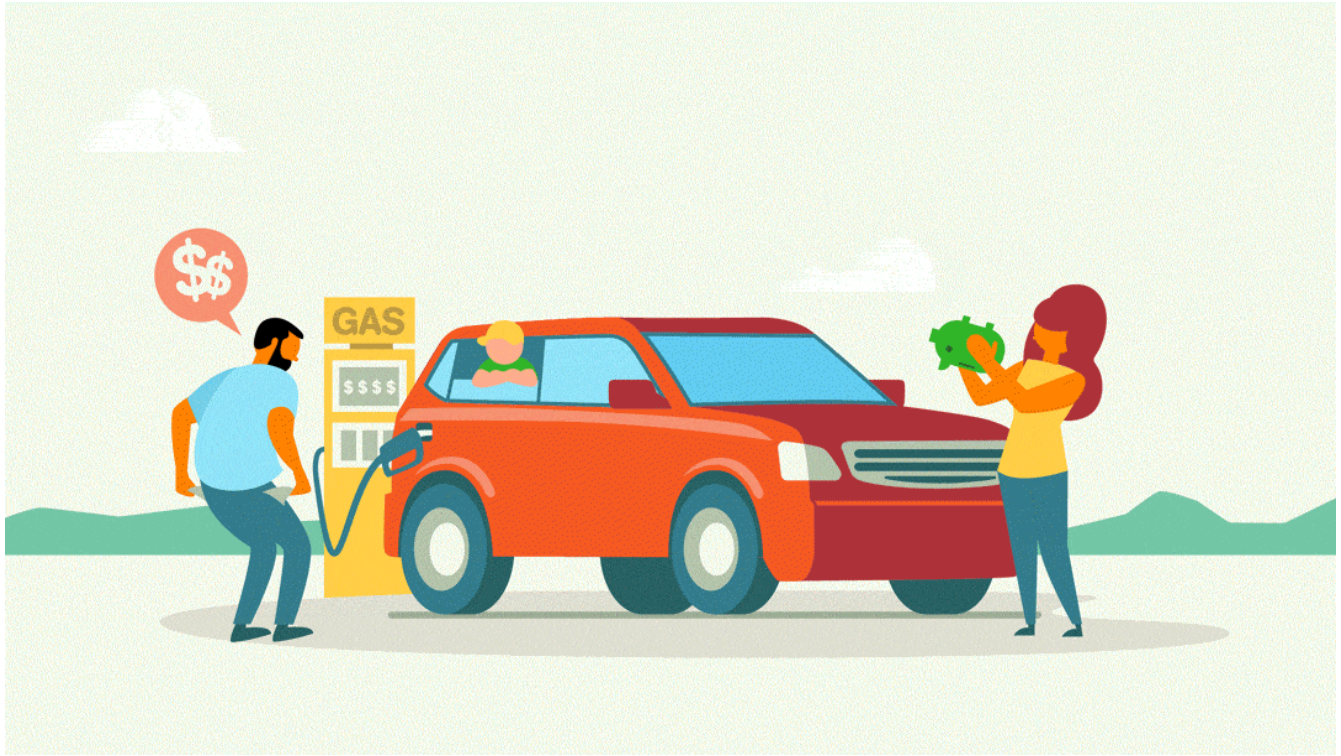
MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

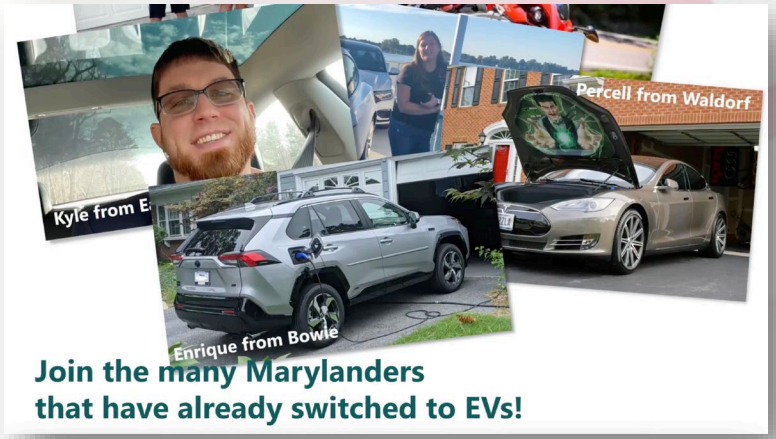
Maryland EV Social Media Ad Analytics

Oct 25, 2022 – Dec 23, 2022

40% Engagement Rate!

Male Impressions: 317,575
Female Impressions: 266,843
Total Impressions: 584,418





MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council

State Agency Updates

Public Service Commission (PSC)

- The PC44 EV Work Group filed a supplemental reliability summary report with the Commission on December 1, 2022. A Commission decision is pending.
- BGE, Pepco, and DPL filed proposed changes for the demand response potion of their Smart Charge Management project on December 20, 2022. A Commission decision is pending.
- SMECO filed its supplemental application for residential and multi-unit dwelling EV programs on December 20, 2022. A Commission decision is pending.
- The PC44 EV Metering Subgroup filed a report with the Commission on December 22, 2022. A Commission decision is pending.

MDE Program Updates

Volkswagen Settlement Updates

EVSE Infrastructure Programs

- Phase II
  - AG finalized final Agreements for both the CAGP and ECGP
  - Agreements have been sent out for signatures
  - Expect Agreements to all be signed by February/March 2023

Vehicle Replacement Projects

- Contacted applicants whose projects are still outstanding to determine status
- Re-open several funding categories in 2023

MEA Program Updates

EVSE Rebate Program

- 11/30- notice of funding depletion.
- Allowing applicants to continue to submit for MEA to hold.
- Status TBD- dependent on upcoming legislative/budgetary session.

Clean Fuels Incentive Program (CFIP)

- Total- received 11 applications, 54 vehicles, $4,089,770 funds requested.
- Electric- 8 applications, 37 vehicles, $3,280,000 funds requested.
- Recommendations to management soon.
- Potential for second funding round.

Clean Fuels Technical Assistance (CFTA) Program

- Application period closed 12/31, received 3 applications.
- Determining next steps.

Additional State Agencies

- MDP
- DGS

Closing Remarks

Next ZEEVIC Meeting: March 8, 2023

MARYLAND ZERO EMISSION
Electric Vehicle Infrastructure Council