MARYLAND
Electric Vehicle
Infrastructure Council

2018 Annual Report

March 2019

Chaired and Staffed by the Maryland Department of Transportation

MARYLAND DEPARTMENT OF TRANSPORTATION

Presented to

Governor Lawrence J. Hogan, Jr.

and the

Maryland General Assembly

Presented by the

Electric Vehicle Infrastructure Council

(SB 714, Chapter 378, Acts of 2015)

MSAR #10491

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Acronyms

The following acronyms are used in this report:

ADA	Americans With Disabilities Act
AFIP	Alternative Fuel Infrastructure Program
BEV	Battery Electric Vehicle
BEVI	Baltimore Electric Vehicle Initiative
CAFE	Corporate Average Fuel Economy Standards
CVF	Clean Vehicles and Fuels Workgroup of the Transportation Climate Initiative
DC	Direct Current
DGS	Maryland Department of General Services
EMT	Environmental Mitigation Trust Fund (VW Settlement)
EV	Electric Vehicle
EVI	Electric Vehicle Institute
EVIC	Electric Vehicle Infrastructure Council or The Council
EVIP	Electric Vehicle Infrastructure Program
EVSE	Electric Vehicle Supply Equipment
FAST	Fixing America's Surface Transportation Act
FHWA	Federal Highway Administration
GHG	Greenhouse Gas
HOV	High Occupancy Vehicle
kWh	Kilowatt-Hour
MDE	Maryland Department of Environment
MDOT	Maryland Department of Transportation

MEA	Maryland Energy Administration
MOU	Memorandum of Understanding
MVA	Motor Vehicle Administration
PEV	Plug-In Electric Vehicle - term used collectively for BEVs and PHEVs
PHEV	Plug-In Hybrid Electric Vehicle
PSC	Public Service Commission
TCI	Transportation Climate Initiative
TSFC	TransIT Services of Frederick County
TSO	The Secretary's Office of Maryland Department of Transportation
USGBC	U.S. Green Building Council
VMT	Vehicle Miles Travelled
VW	Volkswagen
ZEV	Zero Emission Vehicle

A Message from R. Earl Lewis, Jr.,

EVIC Chair

"As we continue to make progress toward our goals, we remain dedicated to providing customer-driven leadership that delivers safe, sustainable, intelligent, and exceptional solutions in order to connect Marylanders to life's opportunities.

I am proud of the work that has been undertaken by EVIC this year, and I am pleased to inform you that our hard work in Maryland has not gone unnoticed. During the summer of 2018, we learned that Maryland earned a distinct honor by being listed as a Top Tier ZEV State by the Electrification Coalition, second only to California. This distinction was bestowed upon us because of our continued progress in three areas, which are highlighted in further detail in this report, 1.) Incentives; 2.) Public Outreach Efforts; and 3.) Publicly Available Charging Infrastructure.

We have begun to see a convergence of efforts around increasing EV registrations and associated EV charging infrastructure. The Maryland Commission on Climate Change is relying on the adoption of EVs to help the State meet its greenhouse gas (GHG) reduction goal of 40 percent from 2006 levels by 2030. In addition, EVIC, and our stakeholders, have played an integral role in the EV Workgroup of the Public Conference 44 (PC44) Grid Modernization Hearing before the Public Service Commission (PSC). We believe it is likely that EVIC will play an important role as the PSC moves forward with aspects of the Petition for Implementation of a Statewide Electric Vehicle Portfolio, and we are up to the challenge.

Finally, I would like to express my sincere gratitude for the continued efforts of EVIC and the dedication of our members, their organizations, and the members of the public who take time out of their busy days to share their experiences with us and help us work toward solutions."

Introduction

This document fulfills the requirement to submit an annual, 2018, report of the Maryland Electric Vehicle Infrastructure Council's (EVIC) work and recommendations to the Governor and General Assembly under the Maryland Electric Vehicle Infrastructure Council Act.

Notable Achievements

Since 2011, EVIC has worked to remove barriers to Plug-in Electric Vehicles (PEV) usage in Maryland through the development of infrastructure action plans, permitting standards, and state incentives for the purchase of PEVs and Electric Vehicle Supply Equipment (EVSE). In 2018, EVIC and its participants worked on several initiatives to advance these interests. Notable 2018 achievements included:

- MDOT designed and launched a new EVIC Website with an interactive Story Map that includes outreach locations, density of EVs by zip code, EVSE locations, and Alternative Fuel Corridors. Click here to visit the new website.
- MDOT, in consultation with EVIC's Communications Work Group, refurbished the MarylandEV.Org Website. The website has a new design, updated information, and will act as a hub for EV information in Maryland.
- EVIC Members were instrumental in providing guidance and expertise to facilitate the passage of Howard County Council Bill 76 (CB76-2018), which removes some of the barriers associated with residential EV charging. This legislation requires electric vehicle charging infrastructure, specifically, Level 2 charging or higher, be installed when new residential developments are constructed. This requirement applies to the new construction of single family homes and multi-unit dwellings, ensuring that developers install at least one communal, Level 2 EV-ready parking space for every 25 residential units.
- The benefits of EV ownership, and the incentives available for the purchase of EVs and installation of EVSE, were shared with 1,786 Marylanders at eight events across seven counties to increase awareness through an outreach effort focused on public education.
- Maryland's Top Tier ZEV Scorecard ranking by the Electrification Coalition. The ZEV Scorecard was developed as a ranking system and informational tool for policymakers, advocates, and the public to use as a guide to improve the effectiveness of state-level actions to increase adoption of plug-in electric vehicles (PEV). Maryland, joined by California and Connecticut, was placed into the Top Tier due to supportive PEV policies and widespread adoption.
- In March 2018, the Federal Highway Administration (FHWA) designated I-81, I-83, an extension of the existing I-495 corridor, and I-695 as Corridor-Ready Alternative Fuel / EV corridors. US 301 was designated as a Corridor-Pending Alternative Fuel / EV corridor.

Background on Maryland's Electric Vehicle Infrastructure Council

EVIC Composition and Support

The Council includes a diverse representation of interests, perspectives, and responsibilities, including utilities, State agencies, private enterprise, and non-profit EV advocates. The Council membership list is provided in Appendix A. In addition, all Council meetings are open to the public and time is allotted at every meeting for the Council to hear public comments.

EVIC has three workgroups, which support the Council by providing analysis and recommendations for consideration by the full EVIC. The workgroups are:

- Communications
- Legislative
- State Agency

EVIC Formation and Requirements

EVIC was originally established in 2011 and, in 2015, was extended through 2020 via Maryland legislation. In addition to creating EVIC, the legislation established requirements for the Council. Table **1** illustrates the original requirements and the status of those requirements as of December 2016.

Table 1: EVIC Legislative Requirements & Status

	Requirement	Status
1	Develop an action plan to facilitate the successful integration of electric vehicles into the State's transportation network.	The Action Plan was delivered in 2012 and the 32 recommendations were revisited this year (See Appendix B)
2	Assist in developing and coordinating statewide standards for streamlined permitting and installation of residential and commercial Plug-in Electric Vehicle (PEV) charging stations and supply equipment.	Addressed through Legislative Workgroup and EVIC recommendations.
3	Develop a recommendation for a statewide charging infrastructure plan, including placement opportunities for public charging stations.	Discussed in 2018 at the State Agency Workgroup Meetings and currently being developed in conjunction with Volkswagen Consent Decree efforts.
4	Increase consumer awareness and demand for electric vehicles through public outreach.	Addressed through the Communications and State Agency Workgroups.
5	Make recommendations regarding monetary and nonmonetary incentives to support electric vehicle ownership and maximize private sector investment in electric vehicles.	Addressed through the Legislative Workgroup and EVIC recommendations.
6	Develop targeted policies to support fleet purchases of electric vehicles.	Discussed in 2018 at the State Agency Workgroup Meetings.
7	Develop charging solutions for existing and future multi-dwelling units.	Discussed during 2018 Legislative Workgroup and addressed in EVIC recommendations.
8	Encourage local and regional efforts to promote the use of electric vehicles and attract federal funding for State and local PEV programs.	Currently being developed in conjunction with Volkswagen Consent Decree efforts and through work at Metropolitan Planning Organizations (MPOs).
9	Recommend policies that support PEV charging from clean energy sources.	Discussed at 2018 State Agency Workgroup meetings. MDOT leading by example through solar program.
10	Recommend a method of displaying pricing information at public charging stations.	To be addressed by Workgroups.
11	Establish performance measures for meeting PEV–related employment, infrastructure, and regulatory goals.	To be addressed by Workgroups.
12	Pursue other goals and objectives that promote the utilization of electric vehicles in the State.	To be addressed by Workgroups.

Status of EVIC's 2012 Recommendations

In addition to the requirements outlined in the previous section, EVIC was also responsible for developing an initial report in 2012 comprised a Statewide Charging Infrastructure Plan, an Action Plan, and 32 recommendations intended to promote widespread PEV adoption. In March 2016, based on advice from the State Agency Workgroup, each of the recommendations from the Council's 2012 report was assigned to a workgroup for further investigation and comment. The workgroups met in the intervening months to address the matters assigned to them. Appendix B includes an annual status update on each recommendation.

Electric Vehicle Market and Electric Vehicle Supply Equipment Status

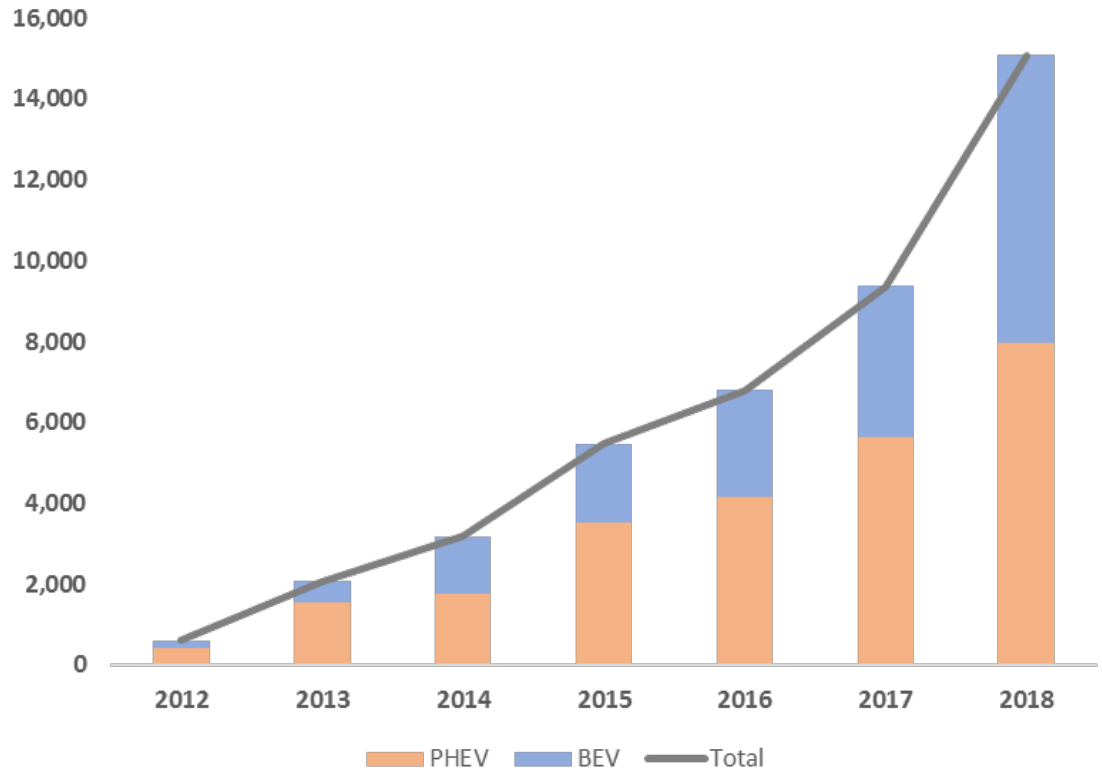
Vehicles

2018 was another year of significant growth for EV ownership in Maryland. Lower vehicle costs and increasing availability of vehicles and charging infrastructure has led to greater numbers of EVs being registered across the state.

In 2012, there were two Battery Electric Vehicles (BEV) models available in Maryland, (the Nissan Leaf and the Chevrolet Volt). Today, there are over a dozen BEV models available for purchase in Maryland in addition to over 2t plug-in hybrid vehicles. Appendix C includes a list of all PEVs currently available for purchase in Maryland.

As illustrated in Figure 1, the total number of PEVs registered in Maryland increased from 609 in fiscal year (FY) 2012 to 15,074 in FY 2018. In FY 2018, 47% (7,126) of the vehicles registered were BEVs and 53% (7,948) were Plug-in Hybrid Electric Vehicles (PHEVs).

Figure 1: Total PEVs Registered in Maryland (Fiscal Years 2012-2018)



Infrastructure

2018 was another year of growth in the availability of public charging infrastructure in Maryland. While this growth is significant, it is anticipated that investment as a result of the VW Mitigation Fund and the potential investment from utilities proposed in PC44 will spur even greater growth in the availability of public charging infrastructure in Maryland.

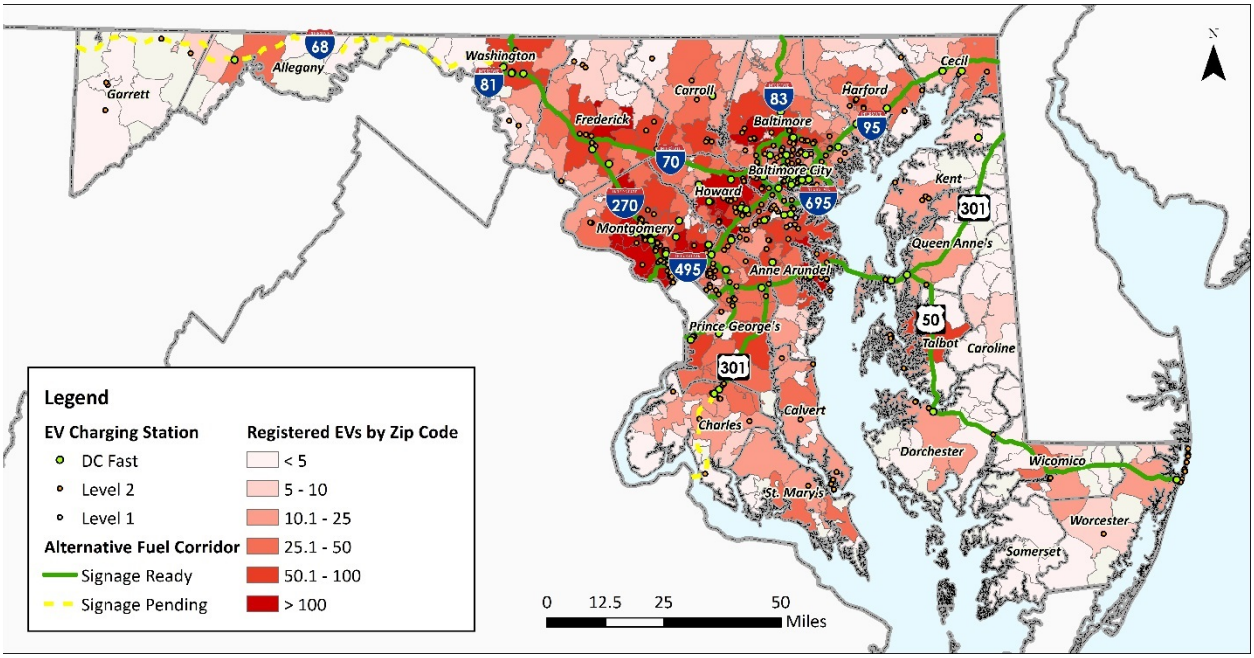
A goal of the 2012 Infrastructure Plan was to facilitate charging both at home and the workplace to ensure EV drivers would have the opportunity to recharge. The establishment of adequate charging infrastructure is necessary to alleviate "range anxiety." The concerns about short battery life and long periods required for charging are quickly changing. There are three types of chargers that can be installed: Level 1, Level 2, and DC Fast charging. The U.S. Department of Energy's Station Locator is an on-line tool that allows users to find charging stations. The speed of charging and the power required varies by charger type and is illustrated in Table 2.

Table 2: EVSE Power Requirements, Charging Speed, and Public Availability in Maryland

EV Charger Type	Speed	Power Required	Total in MD[1]	% of Total
Level 1	11-20 hours for Full Charge	120 volts	62	4%
Level 2	3-8 hours for Full Charge	240 volts	1208	80%
DC Fast Charge	30 minutes for 80% Charge	208-600 volts	233	16%

Figure 2 illustrates the locations of the over 570 EV charging stations and over 1,500 public outlets available in Maryland as of October 2018. Each location has one or more chargers, and each charger has one or more outlets.

Figure 2: Existing, Publicly Available EV Charging Stations & EV Charging Corridors



There are now nearly 200 outlets for charging vehicles installed at state owned or leased facilities. These charging stations are located at facilities owned by MDOT, Maryland Department of Environment (MDE), Maryland Department of General Services (DGS), and the University of Maryland System.

[1] http://www.afdc.energy.gov/locator/stations/

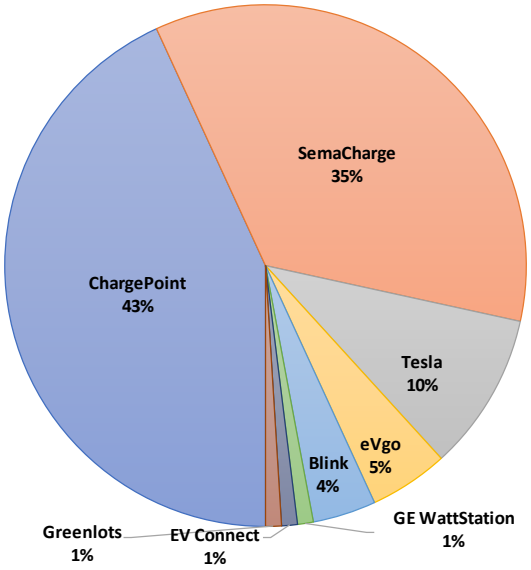
The University of Maryland maintains chargers at the campuses of Frostburg State, Shady Grove, Coppin State, Salisbury, Towson, Baltimore City, Baltimore County; and College Park.

Chargers are also located at the Montgomery Park Business Center where the MDE, the Maryland Energy Administration (MEA), and the Maryland State Lottery are located.

Maryland has invested over $1.5 million in chargers at MARC Train Service and Metro stations, Park and Rides, and other transit connection and public locations.

Maryland's two travel plazas – the Chesapeake House and Maryland House – reopened in 2017 after renovation and now include multiple charging stations. The public charging stations available between the two travel plazas include 18 Tesla superchargers, 2 Americans With Disabilities Act (ADA) compliant Tesla level 2 chargers, and 8 Electric Vehicle Institute (EVI) level 3 DC Fast chargers.

Figure 3: Maryland's Charging Network



Charging Networks

As illustrated in Figure 3, there are several charging networks now operating in Maryland. Though offerings vary among EVSE providers, charging networks may include advanced functionalities for site hosts, such as pricing and access controls, data reporting, and charger availability notifications. The two largest networks in the State are ChargePoint and SemaCharge and these two companies are currently responsible for approximately 80% of the available chargers statewide.

EVIC's 2018 Activities

EVIC Meeting Agendas

The Council held six meetings in 2018. Meeting dates and topics that were discussed are listed in Table 3. EVIC typically meets every other month at MDOT's Secretary's Office (TSO) and the workgroups meet in the intervening months. All Council meetings are open to the public and the agendas are posted on the EVIC website in advance of the meetings.

EVIC has three informal working groups: Legislative, Communications, and State Agencies. Working group meetings are generally held on alternating months from full Council meetings. The working groups tackle specific issues and bring their research and recommendations to the full council.

Table 3: 2018 EVIC Meeting Topics

Date	Meeting Topics
01/19/2018	MDOT response to FHWA Corridor Request, Electrify America Meeting Update, EV Incentive Report, PSC PC44 Update, Legislative Update – HOA Bill and Parking Bill
03/15/2018	Announcement of Maryland FHWA Corridors, MDOT Signage Plan, EV Incentives Report, Legislative Update, VW Mitigation Workplan, MDP 'A Better Maryland' plan, Frederick EV Plan
05/30/2018	PSC PC44 Updates, State Agency Updates, Introduction of EVIC Procedures, MDEV Outreach Events, MDOT Signage Plan, Commission on Climate Change Recommendations, EV Incentives Report, Introduction of BEVI Internship
07/26/2018	Multi-state ZEV Report, TCI Initiative, MEA and DC EV Workshop, EV Incentives Report, PSC PC44 Update, BEVI Intern Presentations
09/26/2018	Morgan State University Survey Report, PSC PC44 Response, EV Incentive Report, VW Mitigation Plan Update, State Fleet EV Recommendations, HOA Group Discussions, BEVI Internship Conclusion
12/14/2018	Legislative Updates including EV incentives and HOA discussions, FHWA Solicitation for Alternative Fuel Corridor Nominations, VW Mitigation Plan, MEA Incentives Report, Debrief on National Governor's Association Transportation Electrification Summit, Communications – Website and Outreach Update

2017-18 EVIC Priorities

In 2017, the Council established a set of six priorities. Below are those priorities, and updates on their progress.

1. Developing and Approving EVIC Procedures.
    a. Procedures were drafted and adopted by EVIC in 2018.
2. Maximizing the use of grant and alternative funding opportunities for EV / EVSE in MD.
    a. Maryland has a draft work plan for the VW mitigation funding and is pursuing funding from Electrify America.
    b. EVIC will also play an important role in implementing PSC's Order Number 88997, in the matter of the Petition of the Electric Vehicle Work Group for the implementation of a Statewide Electric Vehicle Portfolio.
3. Education and Outreach – including any partnerships to be solidified before the end of June.
    a. Maryland continues to have a presence at public events and has updated both the EVIC website as well as the MarylandEV.org site.
    b. MDOT has continued to partner with BEVI and UMBC to support EV education and outreach through BEVI's Electric Vehicle Education Program (EVEP), which relies on guidance and direction from EVIC.
4. Developing and implementing the legislative agenda for 2018.
    a. EVIC continues to meet with elected officials and representatives from HOAs to discuss approaches to removing existing EVSE barriers and to advocate for continued incentives for the purchase of EVs and the installation of EVSE.
5. Ensuring the prioritization of the deployment of EVSE Statewide, keeping the importance of our EV Charging Corridors in mind.
    a. EVIC discussed EVSE deployment strategy and identified critical corridors for submission under FHWA's solicitation for additional alternative / EV corridors.
6. Improving workplace and urban charging.
    a. EVIC continues to pursue this goal and works with Communications Committee to ensure that workplace resources are available on the MarylandEV.org website.
    b. EVIC members worked with closely with Howard County officials to support the passage Howard County Council Bill 76 (CB76-2018), which removes some of the barriers associated with residential EV charging.

EV Outreach Efforts

MEA, MDE, and MDOT continued their coordination with EVIC to increase EV awareness through an outreach effort focused on workplace charging, vehicle dealership, and public education. 2018 highlights include:

- Finalizing the updates to the MarylandEV.org website in coordination with EVIC's Communications Working Group and BEVI.
- An Electric Vehicle Workshop and Showcase event held at the Pepco Watershed Facility on July 12th. Over 100 participants, representing both public and private sectors, attended the event where they had an opportunity to learn about EV and EVSE basics and hear from EV and EVSE leaders in the transit, multi-unit dwelling and workplace arenas. Attendees also had the opportunity to check out several EV's, including the country's first all-electric police patrol car." Pictures and presentations available here.
- As illustrated in Table 4, in person, public outreach is a cornerstone of the Maryland EV communications and education strategy. In 2018, MDOT, and partner organizations, were able to directly interact with 1,786 individuals (touchpoints) by staffing informational booths at eight events in seven counites across the State as well as Baltimore City.

Table 4: 2018 Public Outreach

Date	Outreach Event	County	Individuals/Touchpoints
04/07/2018	Maryland Chicken Wing Festival	Anne Arundel	309
04/21/2018	Savor Bowie Festival	Prince George's	222
05/05/2018	Ocean City Springfest	Worcester	175
06/09/2018	Interstate Wine Festival	Washington	270
09/22/2018	Chesapeake Oyster & Wine Festival	St. Mary's	65
10/06/2018	Darlington Apple Festival	Harford	415
10/20/2018	Baltimore Zoo OktoBEARfest	Baltimore City	189
11/03/2018	Frederick First Saturday	Frederick	141

Maryland Clean Cars Program and the ZEV Memorandum of Understanding

Under federal law, California is permitted to promulgate vehicle emission standards that are more stringent than the national standards. Other states have the option to choose whether to follow either the national or California standards. In 2007, Maryland elected to follow the California standards and enacted the Clean Cars Program via legislation which officially adopted California's vehicle emissions standards. The program went into effect for all cars beginning with model year 2011.

On October 24, 2013, Maryland joined seven other states (California, Connecticut, Massachusetts, New York, Oregon, Rhode Island, and Vermont) and signed a memorandum of understanding (MOU) committing to coordinated action to ensure the successful implementation of their state ZEV programs. As part of this effort, a Multi-State ZEV Action Plan was developed and released in 2014. This plan detailed the various efforts outlined in the ZEV MOU.

To reflect the changes that have occurred since the Action Plan was released in 2014, the ZEV MOU released the 2018-2021 Multi-State ZEV Action Plan.

The clean air association of the northeast states (NESCAUM) released the following description of the 2018-2021 Action Plan:

The Action Plan, which builds on the successes and lessons learned from implementation of an earlier 2014 ZEV Action Plan, presents 80 market-enabling action recommendations for states, automakers, dealers, utilities, charging and fueling companies and other key partners to rapidly accelerate mainstream consumer adoption of zero emission vehicles, including plug-in hybrid, battery electric and hydrogen fuel cell vehicles.

Many of the 2014 Action Plan recommendations have been successfully implemented or are under way. For example, Task Force states have:

- Enacted ZEV purchase and infrastructure incentive programs;
- Launched a first-ever jointly funded state/industry brand-neutral consumer outreach and education campaign;
- Established a state/dealership workgroup to foster collaboration with dealers;
- Opened public utility commission proceedings to consider utility and other transportation electrification programs; and
- Partnered with automakers on a "Collaboration for ZEV Success" to accelerate ZEV adoption.

While many of the recommendations in the 2014 Action Plan remain valid today, the new Action Plan represents a redoubling of state efforts to accelerate electrification of the light-duty vehicle market, and recognition of the important role that public-private partnerships involving the automakers, dealers,

utilities, and others play in the effort. Recommendations for states and other key partners in the updated Action Plan are focused on five priority areas:

- Raising consumer awareness and interest in electric vehicle technology;
- Building out a reliable and convenient residential, workplace and public charging/fueling infrastructure network;
- Continuing and improving access to consumer purchase and non-financial incentives;
- Expanding public and private sector fleet adoption; and
- Supporting dealership efforts to increase ZEV sales.

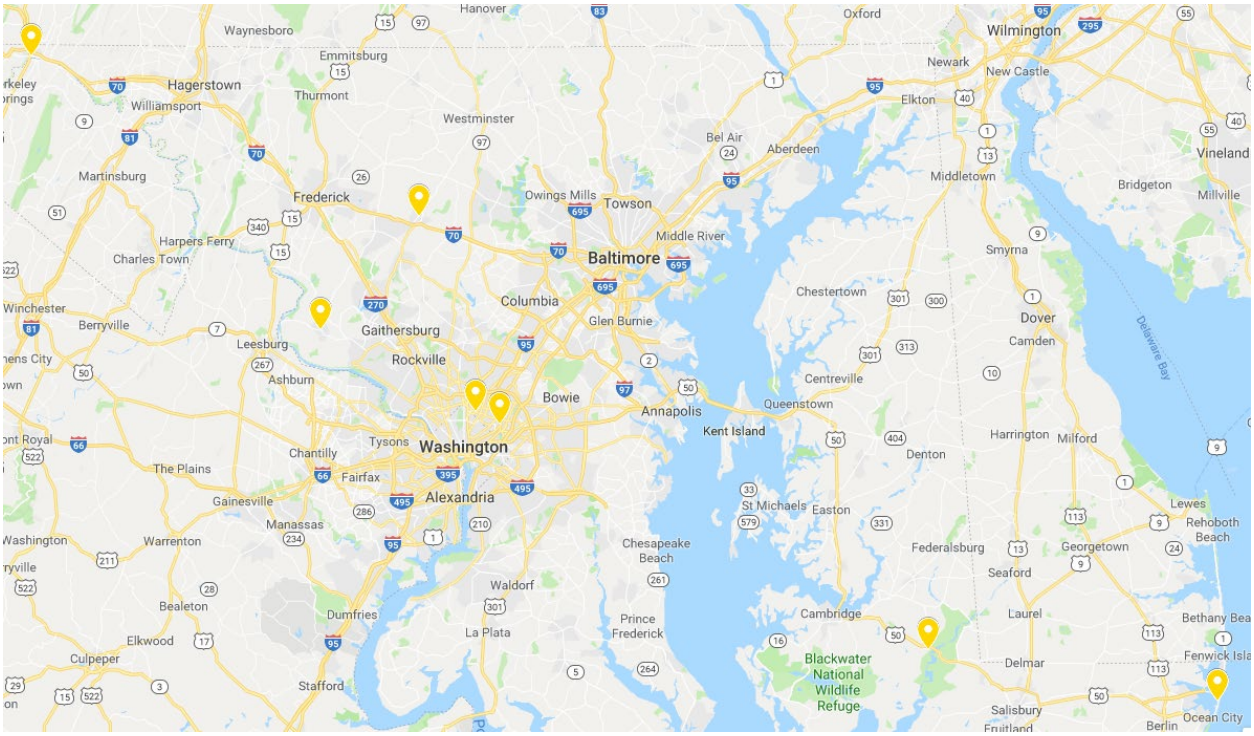
Maryland Infrastructure Promotion

In accordance with the Council's Statewide Infrastructure Plan recommendations, MEA administers several transportation incentive programs designed to accelerate the adoption of PEVs and the installation of EVSE.

Alternative Fuel Infrastructure Program

The Alternative Fuel Infrastructure Program (AFIP) was created to increase the availability of alternative refueling infrastructure, including EVSE. Eligibility includes ethanol, hydrogen, propane, natural gas, and DC Fast Charging stations. The DC Fast Charging stations require a minimum 50% match and are eligible for a maximum award of $55,000 per station. In 2018, MEA awarded approximately $786,000 for 16 fast chargers at 7 locations. Once completed, these chargers (shown in yellow in Figure 4 have the potential to displace over 845,000 gallons of petroleum annually. The FY 2019AFIP program opened July 1, 2018 and closed December 31, 2018.

Figure 4 - Fiscal Year 2018 DC Fast Charging AFIP Awards



Electric Vehicle Excise Tax and EVSE Rebate Incentives

In addition to the federal tax incentive (up to $7,500) for the purchase of a PEV, Maryland offers an excise tax credit of up to $3,000. The incentive is scaled in increments of $100 per kilowatt hour (kWh) of battery capacity, and eligible vehicles must have a purchase price of below $60,000.

- As of September 2018, 1,743 excise tax credits had been issued, averaging $2,144 per credit, and totaling $3.7 million
- Since 2011, over 6,600 credits have been issued, totaling over $13.4 million

Maryland also provides a rebate program for the installation of charging infrastructure. Rebates are available for up to 40% of the purchase and installation price of the EVSE and are capped at the following amounts:

- Residential: 40% up to $700
- Commercial: 40% up to $4,000
- Retail Service Station: 40% up to $5,000

As of November 2018, 483 residential rebates, 142 commercial rebates and 1 service station rebate were distributed. 2018 rebates totaled $777,440. The average rebate was $525 for residential, and $3,656 for commercial. Since 2015, over $2.2 million in rebates have been distributed across the state.

Both Maryland incentives were set to expire in 2017 but were adjusted and extended through 2020. The legislation adjusting and extending the credits is listed in Appendix D.

Morgan State Survey Report

In 2016 Morgan State University conducted a survey of EV owners in Maryland. In 2018, Morgan State released an updated report from these findings, noting:

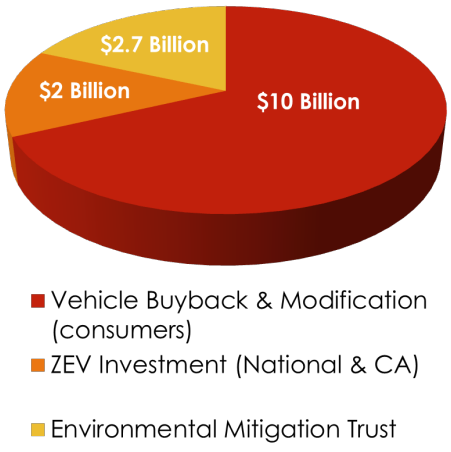
- Two marketing messages may be useful to target potential EV Drivers
    - Targeting mid to high earners who are more likely to purchase an EV for environmental reasons
    - Targeting low to mid earners who are more likely to purchase for price, value and/or performance
- Most EV owners charge at home, and thus legislation to address the difficulty of charging in HOAs or multifamily housing would allow for greater equity and EV market penetration
- More information can be found here

Volkswagen Settlement

In the fall of 2016, Volkswagen (VW) settled to pay $14.7 billion dollars through a case filed by EPA alleging that VW violated the Clean Air Act with regards to approximately 580,000 vehicles, model years 2009 to 2016 with 2.0 and 3.0-liter diesel engines. The VW vehicle computers contained algorithms that caused the emission control system of those vehicles to perform differently during normal operations than during emission testing. The vehicles were emitting NOx emissions significantly in excess of EPA compliance levels under normal operating conditions.

The settlement is divided into three pools of money, the Environmental Mitigation Trust (EMT), the Zero Emission Vehicle ZEV Investment, and Consumer Vehicle Buyback and Modification. The breakdown of funding is illustrated in Figure 5

Figure 5: Volkswagen Settlement Funding



Environmental Mitigation Trust

In 2018, Maryland released a draft work plan for use of the EMT funds as defined in Appendix D-2 of the settlement. The EMT funds are primarily designed to reduce diesel emissions, and up to 15% of the allotted funds may be used for the installation of light-duty, public EVSE. Maryland has been allocated approximately $75.7 million dollars under the EMT, and in the draft plan, allocates the full 15% ($11.3 million) for the installation of EVSE.

Proposals for eligible mitigation projects can be submitted to MDE by close of business on December 31, 2018.

More information on the draft plan and proposals can be found here: http://www.mde.state.md.us/programs/Air/MobileSources/Pages/MarylandVolkswagenMitigationPlan.aspx

ZEV Investment

Appendix C of the settlement establishes a nationwide ZEV investment program which provides a total of $2 billion to install EVSE and conduct brand-neutral outreach efforts. The program specifies that $800 million will be dedicated to California projects and $1.2 billion will be available for the rest of the Country, the funding will be implemented in 30-month increments of $300 million per period and must be fully spent within 10 years. On December 9, 2016, VW launched their website, www.electrifyamerica.com, for accepting the first round of project proposals and ideas under the ZEV Investment fund.

Transportation Climate Initiative (TCI)

The Transportation and Climate Initiative (TCI) is a collaboration of the transportation, energy, and environment agencies of the 11 Northeast and Mid-Atlantic states and the District of Columbia. Through the TCI Clean Vehicles and Fuels workgroup, state agency participants have shared best practices and coordinated multi-state initiatives to facilitate the deployment of electric vehicle charging infrastructure and other alternative fueling stations in the region.

Maryland is an active participant in the Clean Vehicles and Fuels (CVF) workgroup of TCI which aims to support the mass-market deployment of clean vehicles in the TCI states, and to maximize the economic opportunities that these vehicles can bring to our region.

Over the upcoming year, the CVF workgroup will discuss and develop best practices for locating signage along federally designated alternative fuel corridors in the region. This work will include discussions of best practices for coordinating signage deployment along inter-state corridors, as well as engagement with federal, state, and local agency officials. The TCI workgroup may also explore how regional coordination on alternative fuel corridor signage can enhance existing state programs to increase consumer awareness of alternative fuel infrastructure.

PSC Public Conference 44

In January 2018, the PC44 Electric Vehicle Workgroup Leader submitted a proposal recommending that the PSC convene a docketed proceeding to consider the implementation of a coordinated Statewide Electric Vehicle Portfolio (the Proposal). The Proposal was designed to address the barriers to the deployment of EVs, increase the efficiency and reliability of the electric distribution system, and lower electricity use at times of high demand.

As noted in the Proposal, "there is a significant overlap between the Council's membership and the PC44 EV Work Group, so that the instant Proposal benefited from the perspective of those stakeholders engaged in the EVIC's activities since 2011." As a result, EVIC will remain engaged in the deployment of the recent Order (No. 88997) issued by the PSC in the matter of the petition of the electric vehicle work group for the implementation of a statewide electric vehicle portfolio (the Petition). Under the Petition, the PSC approved and denied some portions of the Proposal and acknowledged that the decision realigned EV charging among the state's public utilities to supplement current and future state environmental and transportation electrification goals.

Greenhouse Gas Reduction Act & The Maryland Commission on Climate Change

The Greenhouse Gas Reduction Act of 2009 was enacted in light of Maryland's vulnerability to the impacts of climate change. The Act required the State to develop plans, adopt regulations, and implement programs to reduce greenhouse gas (GHG) emissions by 25% from 2006 levels by 2020. In 2016, Senate Bill 323 (Ch. 11) reaffirmed the GHG reduction goal of 25% from 2006 levels by 2020 and establishes a new reduction goal, requiring the State to develop plans, adopt regulations, and implement programs to reduce GHG emissions by 40% from 2006 levels by 2030. Innovative and widespread vehicle technology improvements, including the proliferative of PEVs, will be vital to reducing transportation sector emissions and meeting Maryland's GHG reduction goals. The Maryland Commission on Climate Change reaffirmed this importance in their 2018 Annual Report, which recommends specific actions related to meeting the State's ZEV goals and projections.

Recommendations

Policy Recommendations

EVIC came to consensus on two policy recommendations, 1.) the right to charge, and 2.) EV parking, to pursue during calendar year 2018. EVIC has been working diligently in these areas and, as illustrated in the report above, has made some progress. EVIC will continue to pursue these recommendations in 2019.

Right to Charge

- EVIC proposed a policy initiative that would seek to clarify how chargers can be installed and operated for non-single-family homes, such as apartment buildings, condos, and HOA facilities.
- With the success of the Howard County legislation, EVIC will pursue partnerships with the Maryland Municipal League and the Maryland Association of Counties to educate their members on the right to charge and to provide the Howard County legislation as an example.

EV Parking

- EVIC will continue to research and discuss policy initiatives that would seek to eliminate the parking of non-EVs in EV charging spaces, known as anti-ICEing.

Additional Recommendations

Future Development and Research Recommendations

EVIC recommends harmonizing the efforts of the Maryland Commission on Climate Change with the efforts of EVIC, as well as the PSC. Coordination will be critical over the coming year, as important reports, policies, and actions are taken to realize converging goals. There are several recommendations for areas that warrant further research and analysis:

- Developing a better understanding of the environmental and economic opportunities that can be realized through the growth of BEV ownership and EVSE installation in Maryland.
- Ensuring EV readiness by finding an appropriate balance between home/workplace/public charging infrastructure.
- Developing a better understanding of the needs of underserved communities within the context of EV deployment.

Communications

EVIC has provided guidance and support for several important communications working group efforts in 2018, including: the sustained improvement of the EVIC website and Story Map, the launch of the revamped MarylandEV.org website, and the continued dedication to direct public outreach. To maintain the momentum generated by this year's accomplishments, the council came to consensus on the following goals for the upcoming year:

- Broaden our scope to incorporate more local and regional partnerships, particularly with respect to public outreach and website maintenance and development.
- Develop a draft plan for social media engagement.
- Develop a dashboard for tracking EV and EVSE related data on the EVIC and/or MarylandEV.org websites.
- Explore the benefits of establishing a SharePoint site for EVIC members.
- Work more closely with other related groups including those addressing connected and autonomous vehicles.

Appendix A – 2018 EVIC Membership

Group Represented	Name
Secretary of Transportation (MDOT)	**R. Earl Lewis, Jr.** Deputy Secretary **(Council Chair)**
Academic Community; a Maryland institution of higher education with expertise in energy, transportation, or the environment (1)	**Z. Andrew Farkas, Ph.D.** Morgan State University, Director and Professor for National Transportation Center
Maryland Association of Counties; rural region (1)	**Raymond Clarke** Talbot County
Maryland Association of Counties; urban or suburban region (1)	**Theodore Atwood** Director, General Services Baltimore City Government
Maryland Municipal League; rural region (1)	**Timothy P. Davis** Planner, City of Frederick
Maryland Municipal League; urban or suburban region (1)	**(VACANT)**
Baltimore Electric Vehicle Initiative (1)	**Ashley Myers** Baltimore Electric Vehicle Initiative
Electric Companies (2)	**John J. Murach, Jr.** BGE **Robert Stewart** PEPCO Holdings, Inc.
Electric Vehicle Manufacturer (1)	**Britta Gross** General Motors Corporation
Electric Vehicle Charging Station Manufacturer (1)	**Dave Schatz** Director, Public Policy ChargePoint, Inc.
Fleet Operators (1)	**Gary Anderson** PHH / Arval

Group Represented	Name
Electrical Workers (1)	**Michael A. Wall** Clinton Electric Company
Environmental Community (1)	**Scott Wilson** Electric Vehicle Association of Washington D.C.
Public, with expertise in energy or transportation policy	**Paul Verchinski**
Maryland Automobile Dealers Association (1)	**Travis Martz**
Retail Electric Supplier Community (1)	**(VACANT)**
Senator (1)	**James N. Mathias, Jr., Senator** District 38, Somerset, Wicomico & Worcester Counties
Delegates (2)	**Richard K. Impallaria** Republican, District 7, Baltimore & Harford Counties **Clarence K. Lam, M.D.** Democrat, District 12 Baltimore & Howard Counties
Maryland Department of Planning	**Bihui Xu** Manager, Transportation Planning
Secretary of the Environment	**Benjamin Grumbles**
Secretary of Commerce	**R. Michael Gill**
Technical Staff of the Maryland Public Service Commission	**Kevin Mosier** Wholesale Markets Liaison
Director of the Maryland Energy Administration	**Mike Jones** Transportation Program Manager

Appendix B – 2012 Recommendations & Action Plan Status

The following tables outline the status of each of the 32 recommendations included in the 2012 EVIC report. The recommendations are grouped by key themes and include the following details:

- The initial (2012) Phase of the recommendation:
    - Phase I: results in little to no immediate fiscal impact and could be undertaken swiftly pending shifts in policy;
    - Phase II: requires substantial new funding and may have to be implemented over several years as funding becomes available;
    - Phase III: exhibits potential for significant benefits but requires additional study and / or resources.
- Whether or not any legislation is required to implement the recommendation.
- The workgroup that the recommendation has been referred to.
- Details on any future action(s) required.

Coordinated Action		
1	A coordinated effort to promote PEV adoption will require continued oversight and management. It is recommended that EVIC be continued beyond its current sunset date of 6/2013.	
	Phase	I
	Legislation Required	Y SB714 extended EVIC until June 2020
	Refer to Workgroup	Not at this time.
	Future Action Required	SB714 requires interim reports on December 1st of each year and a final report of EVIC's work and recommendations by June 30, 2020.
2	Creation of an Urban/ Workplace Charging Task Force to specifically study the issues and opportunities presented by workplace and urban charging and develop solutions and best practices.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	Workplace / Urban Charging Workgroup Existing Workplace Charging Committee will now include efforts related to urban charging.
	Future Action	To be determined through workgroup.
3	Creation of a State Agency Task Force to develop policies for PEV charging at State facilities by State employees, including the use of existing electrical outlets where feasible.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action	State Agency Workgroup meeting regularly to implement recommendation.
4	Dedicated staff should be identified to implement the recommendations of EVIC.	

	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action	To be determined through workgroup.
Policy Changes		
5	The State should place increased emphasis on the electrification of transportation, and its accompanying potential for energy storage and peak load management, as a specific component of the State's overall energy goals. Several aspects of current state policy are technically in conflict with the goal of expanded PEV adoption. The mandates of State programs and funding sources directed toward petroleum use reduction, GHG emissions reduction, and/or support for renewable energy, including the programs of instrumentalities such as the Maryland Clean Energy Center, should be realigned where necessary to ensure support for the advancement of Electric Vehicles.	
	Phase	I
	Legislation Required	TBD
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	To be determined through workgroup. Informal discussions on this have taken place w/ DGS.
6	Institute goal for state agencies that the state vehicle fleet increase the number of its zero-emission vehicles through the normal course of fleet replacement so that at least 10 percent of fleet purchases of light-duty vehicles be zero-emission by 2020 and at least 25 percent of fleet purchases of light-duty vehicles be zero-emission by 2025. This directive shall not apply to vehicles that have special performance requirements necessary for the protection of the public safety and welfare. DBM should be directed to investigate: • Potential for leasing PEVs • Bulk purchase agreements, with local government • Bulk purchase or lease agreements with the NE corridor states.	
	Phase	I
	Legislation Required	TBD
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	To be determined through workgroup. Informal discussions on this have taken place w/ DGS and MDE drafted an executive order.
7	Integration of EVs into State and regional plans and policies: State government should promote EVs through engaging all levels of government in a collaborative approach to EV-friendly plans and policy development consistent with State and Local Smart Growth goals. Policy should include integration of EVs and infrastructure planning into existing regional and local planning processes, such as regional transportation plans, regional (nonattainment area) action plans, local comprehensive plans, zoning, building and other related ordinances and regulations.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	Workshops have been held at Baltimore and Washington, DC MPOs. Future actions to be determined through workgroup.

Policy Changes (Continued)	
8	The PEV Excise Tax Credit expires July 1, 2013. EVIC recommends: a. The legislature extended the statute expiration date to July 1, 2016 b. Remove the 10-vehicle limit placed on businesses c. Consider turning the credit into a point of purchase rebate to reduce the consumer's cash outlay d. Consider expanding beyond the 8,500-pound weight limit

	Phase	I - II	Recommendation a. is Phase I. Recommendations b.-d. are Phase II.
	Legislation Required	Y	Excise tax credit was extended to 2020
	Refer to Workgroup		Legislative Workgroup
	Future Action Required		TBD – Tax credit extended.
9	Regarding the PEV Charging Station Income Tax Credit, EVIC recommends: a. Extend the program for an additional 3 years b. Remove the 30-tax credit limit imposed in the statute (per year cap on stations)		
	Phase	I - II	Recommendation a. is Phase I. Recommendations b. is Phase II.
	Legislation Required	Y	PEV charging station tax credit was changed to a rebate and extended to 2020. Legislation required to remove the cap under item b.
	Refer to Workgroup		Legislative Workgroup
	Future Action Required		To be determined through workgroup.
10	Support extension of the Federal Section 30C tax credit for alternative fuel infrastructure. The IRS Code Sec 30C alternative fuel vehicle refueling property credit (commonly referred to as the infrastructure or 30C credit) originally provided 30 percent of the cost of any property for storing (at the point of dispensing) or dispensing alternative fuel placed in service after 2005 and before the end of 2009. These credits were extended through 2011.		
	Phase	I	
	Legislation Required	Y	Was extended through the end of 2016.
	Refer to Workgroup		Legislative Workgroup
	Future Action Required		To be determined through workgroup.
11	Extend the HOV lane Use Permits to 2020, continuing the caveat to consult with SHA on potential congestion management		
	Phase	I	
	Legislation Required	Y	Was extended to 2022.
	Refer to Workgroup		Legislative Workgroup
	Future Action Required		TBD – exemption extended to 2022.
12	Multi-dwelling Unit Charging Grant Program: Establish a grant program to assist in the funding of EVSE equipment, installation & initial procurement of transaction management software for Multi-Unit Dwellings		
	Phase	II	
	Legislation Required	Y	Was addressed.
	Refer to Workgroup		Legislative Workgroup
	Future Action Required		To be determined through workgroup.

Outreach & Education		
13	Adopt a specific symbol or logo to identify State funded or supported EV equipment, technology or materials, i.e., a State EV website, posters, newsletters, materials etc. This logo would be prominently displayed on State Fleet Vehicles that are EV, as well as on any EV License Plate or decal that may be developed for any state use.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	Continue use of MDEV logo at outreach events.
14	A state website should be developed for Maryland specific EV info on any incentives, regulations, programs, plus links to other EV sites. Website can be used to promote any related state priority, such as choosing renewable energy for consumers' electricity generation.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	Revised MDEV website in development.
15	It is recommended that educational workshops or webinars be conducted for developers, property managers and homeowner associations about the benefits of providing charging. These should provide information about best practices and implementation of charging programs, cover applicable regulations, incentives, real world costs of installation, most cost-effective options, possibilities for using renewable energy in support of charging, and the types of chargers and management services available. Workshops should provide models for dealing with allocation of electricity and maintenance costs, reservation of parking spaces, installation issues, and policies for visitor use. Workshops should also provide a showcase for charging and management service businesses active in Maryland. Workshops/webinars could be provided through partnership with EV non-profits.	
	Phase	II
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup to follow-up with Education & Outreach Workgroup
	Future Action Required	To be determined through workgroup(s).
16	It is recommended that a series of guidance documents be developed to provide guidance on charger installation, management and regulation. The Transportation and Climate Initiative (TCI) and others have produced guidance documents that could be the basis of MD documents, along with the findings of EVIC. EV Infrastructure Planning Guide for Local Governments: to include model documents for permitting, siting and design, building codes, and zoning, including historic district overlays, and parking ordinances. Guidance Document for Local Governments on the issues and complexities of providing urban charging and potential solutions. Document on Charging in the Urban & Multi-unit Setting: To include best practices in the implementation of charging programs. Cover applicable regulations and incentives, real world costs, most cost-effective options, possibilities for using renewable energy in support of charging, charger types and management services available. Provide models for allocation of electricity and maintenance costs, reservation of parking spaces, and policies for visitor use. Should include templates or "sample policy" documents that homeowner and condo associations, apartment complexes, etc. can use in adopting their own policies.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup To be determined through workgroup.
	Future Action Required	TCI and other applicable guidance documents have been posted to EVIC resources website.
17	Outreach Materials should be developed, i.e. brochures, presentations, e-newsletter, and webinars on sub-topics.	
	Phase	II

	Legislation Required	N
	Refer to Workgroup	Education & Outreach Workgroup
	Future Action Required	To be determined through workgroup. Include State efforts / coordinate with State Agency Workgroup.

Promotion of Infrastructure: State Charging Stations		
18	The State should promote, through new and existing programs, and incentives, and in conformance with the State's goals for Smart Growth, the establishment of adequate EV charging infrastructure to support a goal of 60,000 EVs on the road by 2020.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	To be determined through workgroup. Include target of 300,000 EVs by 2025.
19	There are currently seventy-three charging stations accessible by the public installed at state facilities. The Council recommends that the State monitor the installation of private sector charging facilities across the state and continue to add charging infrastructure at state facilities in areas that are underserved.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	Workgroup is coordinating with DBM and other State agencies to monitor the total of state and private sector charging installations.
20	The Council recommends that the State retain the data collection software and continue to allow public access to these charging stations, free of charge until June 30, 2014. In the interim, host agencies shall collect data on the usage of the stations and the amount of electricity used in order to facilitate planning for future installations, electrical infrastructure and cost recovery. Utilization data will be available to the public.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	To be determined through workgroup.
Promotion of Infrastructure: Urban Charging Infrastructure		
21	In urban areas state and local officials, along with utilities, business organizations and property managers should discuss options for wiring existing garages for charging. Garage managers could then incorporate that service into long-term parking agreements with urban area employers.	
	Phase	I
	Legislation Required	N
	Refer to Workgroup	Workplace / Urban Charging Workgroup
	Future Action Required	To be determined through workgroup.
22	Urban Demonstration Projects: a.) Work with a local county or municipality to install and make available charging stations in government parking garages for urban resident charging. b.) Work with county or municipality to identify off-street outdoor parking locations where local resident PEV charging can be provided (Level 1 and Level 2). c.) Work with a business or institution to make Level 1 and/or Level 2 PEV charging available to nearby residents. d.) Work with a multi-unit dwelling owner or property manager to make Level 1 and Level 2 charging available for one or more spaces in a shared parking facility and arrange for tracking and billing for electricity usage by residents.	
	Phase	II

	Legislation Required	N
	Refer to Workgroup	Workplace / Urban Charging Workgroup
	Future Action Required	To be determined through workgroup. Several local governments have charges in municipal garages.

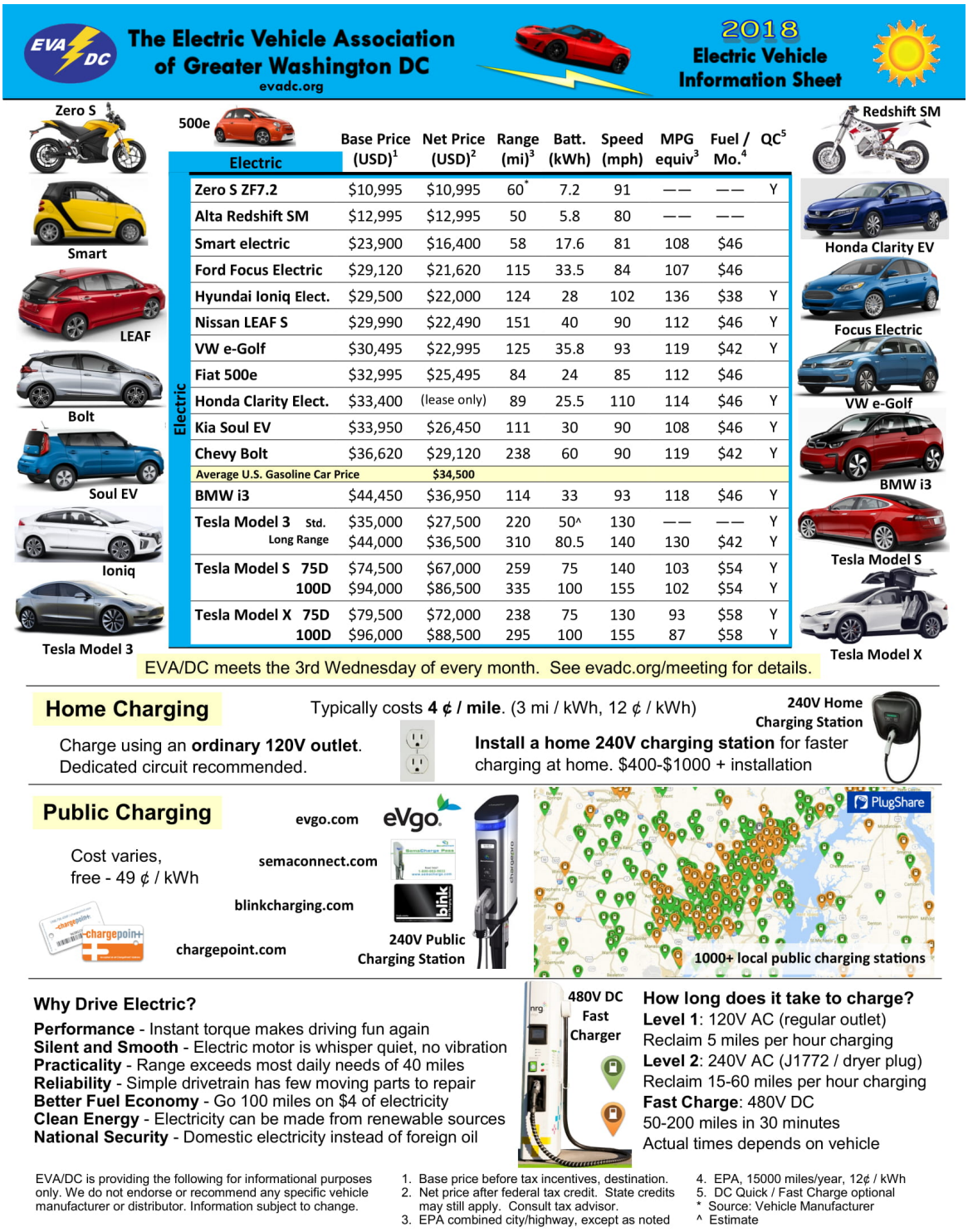
Charging Solutions		
23	Revision of Zoning and Planning Codes: Municipal zoning and planning codes should be amended to permit and regulate on-street PEV charging, require PEV parking spaces in new developments and re-development initiatives and include siting and design guidelines for PEV charging stations, Level 1 outlets and parking spaces.	
	Phase	NA
	Legislation Required	Y
	Refer to Workgroup	Legislative and Education & Outreach Workgroups
	Future Action Required	To be determined through workgroup(s). Potential example from Montgomery County.
24	Historic District Restrictions: State and local zoning and historic district codes should be reviewed for the existence of provisions that could effectively prohibit the installation of PEV charging stations and outlets in historic districts or in close proximity to historic properties. The adoption of code amendments that prohibit unreasonable restrictions on the installation of charging equipment in historic districts while conforming to the federal requirements may be necessary to ensure the location of an adequate number of charging stations and outlets in these communities. Reasonable alternatives, such as siting charging in adjacent public and/or business parking areas should be considered and encouraged.	
	Phase	NA
	Legislation Required	Y
	Refer to Workgroup	Legislative and State Agency Workgroups
	Future Action Required	To be determined through workgroup(s).
25	On-Street Parking: Building on the municipal parking permit model for residential on-street parking, local government-owned and maintained PEV charging stations (Level 2 charging) and 120V outlets (Level 1 charging) can be installed and made available in designated on-street spaces for use by residents who purchase a PEV upgrade to their on-street parking permit.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	Legislative and Workplace / Urban Charging Workgroups
	Future Action Required	To be determined through workgroup(s).
26	Measures to Discourage Overstaying: There are a number of possible measures that, if adopted, can discourage overstaying. Limiting the number of hours a car can occupy the parking space, with associated fines, is one option. Rate structures can also be an effective disincentive. Usage of a pricing mechanism that is based on hourly rates and charges progressively higher rates once the vehicle is fully charged, alone or in combination with the automatic assessment of additional "inconvenience fees," is another option that could encourage drivers to move their vehicles once they are fully charged.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	Suggested this measure be tabled for the time being.
27	Charging and Metering Configurations: To address challenging parking and metering configurations at multi-dwelling unit properties property owners and managers should consider the addition of Level 2 chargers at unassigned shared parking spaces in configurations that maximize the number of spaces that the charging cord can reach.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	None

	Future Action Required	Recommendation to be removed as it is no longer relevant
28	Clustering Level 1 Charging: Assigned parking spaces can be reassigned to locate parking for PEV drivers in clusters close to 120V outlets.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	None
	Future Action Required	Suggested this measure be tabled for the time being due to technology.
Charging Solutions (Continued)		
29	Allocation of Costs and Responsibility for Installation and Maintenance of Charging Stations: Installing necessary panel and wiring upgrades and maintaining the PEV equipment in good repair, and tracking and paying for the electricity usage is a threshold issue for all multi-dwelling unit residents and property owners. The following strategies should be considered: • Use of a business model in which a charging station provider, at its own expense, installs, maintains and owns the charging station and rebates the cost of electricity usage back to the property owner. The PEV owner pays for access to charging in the network through a monthly membership fee. (www.PEVgonetwork.com) • Installation of charging stations by the property owner who recovers the cost of the station and electricity usage through add-ons to leases or, in condominiums or cooperatives, through a special assessment for PEV drivers. • Future State and/or local government programs to support the installation of PEV charging in these more challenging environments and reduce the cost to the property manager/owner.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	None
	Future Action Required	Suggested this measure be tabled for the time being.
30	Technical Workshops: Recommend that the PSC hold Technical Workshops to gather information on innovations in the interface between PEVs and the electrical grid, including both technical feasibility and cost/benefit. Workshop topics should include: • Vehicle –to-Grid (V2G) • Vehicle to Home • Potential for use of down-cycled batteries for power storage.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	None
	Future Action Required	The Chair of EVIC did send a letter to the PSC requesting workshops in 2013. The State Agency Workgroup determined this was not within the State's role.
31	Investment: Foster emerging PEV technologies and their potential for a role in electrical grid management through existing financing vehicles, such as InvestMaryland.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	TBD
	Future Action Required	The State Agency Workgroup determined this was not within the State's role.
32	Financing: The State should explore opportunities to reduce the upfront costs of PEVs and charging infrastructure installation through public/private financing to allow for the provision and underwriting of	

	low-interest, low-risk loans to energy projects that further the State's energy goals, and to link EV charging to renewable energy and grid management.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	Many incentives currently exist.

Charging Solutions (Unnumbered Recommendations)		
	Permit Streamlining: Based on the Council's review and outreach to the community they found no significant existing barriers to the permitting of EVCS, and therefore make no recommendation for action at this time.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	NA
	Future Action Required	None.
	Pricing Displays: The Council recommends that no action be taken to fix a pricing display model for Maryland until after the national standard has been developed and adopted by the National Institute of Standards and Technology (NIST), as those standards are anticipated in July 2013.	
	Phase	NA
	Legislation Required	N
	Refer to Workgroup	State Agency Workgroup
	Future Action Required	To be determined by workgroup.

Appendix C – PEVs Available for Purchase in Maryland



The Electric Vehicle Association of Greater Washington DC

evadc.org

2018 Electric Vehicle Information Sheet


Audi A3 e-tron


BMW 330e


BMW 530e


BMW 740e


Volt


C-MAX


Fusion


Ioniq


Sonata


MINI Cooper


Mitsubishi Outlander

Electric & Gas	Base Price (USD)[1]	Net Price (USD)[2]	Range (mi)[3]	Batt. (kWh)	Speed (mph)	MPG equiv[3]	Fuel / Mo.[4]
Chevy Volt	$33,220	$25,720	53+gas	18.4	100	106	$54
Chrysler Pacifica hyb.	$39,995	$32,495	33+gas	16	——	84	$75
Ford C-Max Energi	$27,120	$23,113	20+gas	7.6	102	95	$67
Ford Fusion Energi	$31,400	$27,393	21+gas	7.6	104	97	$67
Honda Clarity PHEV	$33,400	$25,900	47+gas	17	——	110	$54
Hyundai Ioniq PHEV	$24,950	$20,407	29+gas	8.9	——	119	$50
Hyundai Sonata PHEV	$34,600	$29,681	27+gas	9.8	125	99	$67
Kia Niro PHEV	$27,900	$23,357	26+gas	8.9	——	105	$58
Kia Optima Plug-In	$35,210	$30,291	29+gas	9.8	125	103	$63
MINI Cooper S E Countr.	$36,800	$32,799	12+gas	7.6	78	65	$121
Mitsubishi Outlander	$34,595	$28,759	22+gas	12	——	74	$100
Toyota Prius Prime	$27,100	$22,600	25+gas	8.8	84	133	$50
Average U.S. Gasoline Car Price		$34,500					
Audi A3 e-tron	$39,500	$34,998	16+gas	8.8	130	83	$88
BMW 330e	$45,600	$41,599	22+gas	7.6	140	71	$108
BMW 530e	$52,650	$47,982	16+gas	9.4	——	——	$113
BMW 740e xDrive	$90,700	$86,032	14+gas	9.2	155	64	$121
BMW i3 Range Extender	$48,300	$40,800	97+gas	33.2	93	109	$58
BMW i8	$147,500	$142,500	14+gas	11.6	155	76	$113
BMW X5 xDrive40e	$63,750	$59,082	13+gas	9.2	130	56	$138
Cadillac CT6 Plug-In	$75,095	$67,595	30+gas	18.4	150	62	$113
Karma Revero	$130,000	$122,500	37+gas	21.4	125	60	$125
Mercedes C350e	$47,900	$44,399	8+gas	6.2	155	51	$121
Mercedes GLE550e	$66,700	$62,240	8+gas	8.8	130	43	$163
Mercedes S550e	$96,600	$92,140	12+gas	8.7	130	58	$125
Porsche Cayenne	$79,900	$74,564	14+gas	10.8	151	47	$150
Porsche Panamera	$99,600	$92,930	24+gas	14.1	172	46	$142
Volvo S90 T8	$63,650	$58,648	21+gas	10.4	——	71	$108
Volvo XC60 T8	$52,900	$47,898	18+gas	10.4	——	59	$121
Volvo XC90 T8	$64,950	$59,948	19+gas	9.2	140	62	$113


BMW i3


BMW i8


BMW X5


Cadillac CT6


Pacifica minivan


Honda Clarity PHEV


Karma


Kia Niro


Kia Optima


Prius Prime


Mercedes C350e


Mercedes GLE550e


Panamera 4 E-Hybrid


Cayenne S E-Hybrid


Volvo S90


Volvo XC60


Volvo XC90


Mercedes S550e

Incentives

Federal Tax Credits
Vehicle: up to **$7500**

Version 20180903

DC:	EV Supply Equipment (EVSE) Tax Credit - 50% of cost up to **$1000** Exemption from excise tax imposed on original certificate of title Reduced vehicle registration fee of $36
Maryland:	Excise Tax Credit, $100/kWh Battery, max $3000 on EVs priced ≤$60K EV Supply Equipment (EVSE) Tax Credit - 40% of cost, max $700 High Occupancy Vehicle (HOV) Lane Exemption through Oct. 2022
Virginia:	Reduced personal property tax in Arlington and Loudon counties Discounted electricity rates for off-peak residential EV charging

EVA/DC is providing the following for informational purposes only. We do not endorse or recommend any specific vehicle manufacturer or distributor. Information subject to change.

1. Base price before tax incentives, destination.
2. Net price after federal tax credit. State credits may still apply. Consult tax advisor.
3. EPA combined city/highway
4. EPA, 15000 miles/year, 12¢ / kWh

* Source: Vehicle Manufacturer

Appendix D – Related Legislation (enacted 2011-2018)

Legislation Passed

In the 2018 Legislative Session, the General Assembly enacted the following:

- **HB 714, Chapter 679, Acts of 2018 – Vehicle Laws – HOV Lanes – Plug-In Electric Drive and Hybrid Vehicles**

  This bill extended the termination date to September 30, 2022, for certain provisions of law authorizing certain hybrid vehicles to use a certain high occupancy vehicle (HOV) lane regardless of the number of passengers for plug-in electric drive vehicles and qualified hybrid vehicles

In the 2017 Legislative Session, the General Assembly enacted the following:

- **SB 393/HB 406, Chapter 362, Acts of 2017 – Vehicle Laws – Licensing and Registration– Clean Cars Act of 2017**

  This bill extended through fiscal year 2020 the Electric Vehicle Recharging Equipment Rebate Program and authorization to issue motor vehicle excise tax credits for qualified PEV vehicles. The bill:

  - Increased the total amount of rebates from up to $600,000 to a maximum of $1,200,000, increasing the amount required to be transferred from the Strategic Energy Investment Fund to the Transportation Trust Fund
  - Increased the amount of motor vehicle excise tax credits that may be issued during a fiscal year. The credit value was reduced to $100 kWh of battery capacity of the vehicle up to $3,000.
  - The bill also added additional eligibility requirements, capping qualifying vehicle purchase prices at $60,000, and requiring a minimum battery capacity of 5 kWh.

  http://mgaleg.maryland.gov/2017RS/Chapters_noln/CH_362_hb0406e.pdf

In the 2016 Legislative Session, the General Assembly enacted the following:

- **HB 1179, Chapter 734, Acts of 2016 – Vehicle Laws – HOV Lanes – Plug-In Electric Drive and Hybrid Vehicles**

  This bill extended the authorization of BEVs to use HOV lanes regardless of the number of passengers through September 30, 2018. It also allows for qualified hybrid vehicles to use HOV lanes (effective from October 1, 2016 through September 30, 2018). The hybrid HOV lane use is restricted to the portion of US 50 designated as an HOV lane, between I-95 / I-495 and US 301. All

PEVs must obtain a permit to use HOV lanes. A copy of the bill can be found here: http://mgaleg.maryland.gov/2016RS/chapters_noln/Ch_734_hb1179T.pdf.

- **SB 998/HB 1279, Chapters 334 and 335, Acts of 2012: Motor Vehicle Administration - Plug-In Vehicles - Disclosure of Personal Information**

  This bill addressed concerns expressed by the utility companies and other stakeholders over the potential for PEV clustering and the maintenance of local grid reliability. This legislation helped to alleviate that concern by requiring the Motor Vehicle Administration (MVA) to share PEV registration information necessary for grid planning purposes with the appropriate utility, specifically (1) the street address and (2) type of PEV purchased. When a PEV is registered with the MVA, the MVA can provide the residential address of the owner to the electric utility to ensure that the utility can make any necessary upgrades to the transformers and maintain safe and efficient load distribution. A copy of the bill can be found here: http://mlis.state.md.us/2012rs/chapters_noln/Ch_335_hb1279T.pdf

- **SB 997/HB 1280, Chapters 631 and 632, Acts of 2012: Electric Vehicle Users and Charging Stations – Exclusions**

  This bill provided regulatory clarification for owners and operators of PEV charging stations and PEV charging station service companies or providers by excluding them from the definition of an "electricity supplier" or a "public service company" as defined in law and regulated by the Maryland PSC. The bill also made it clear that these entities continue to remain within the definition of "retail electric customer." The elimination of regulatory uncertainty removed a potential barrier preventing PEV investors and industry participants from entering the market in Maryland. With this new level of regulatory certainty, Maryland's PEV market will be better poised to grow beyond its existing infrastructure and is a signal of Maryland's commitment to the development of a vibrant PEV market. A copy of the bill can be found at: http://mlis.state.md.us/2012rs/bills/hb/hb1280t.pdf

In the 2015 Legislative Session, the General Assembly enacted the following:

- **SB 714, Chapter 378, Acts of 2015 - Maryland Electric Vehicle Infrastructure Council - Reporting and Sunset Extension**

  This bill extended the tenure of the Council until 2020 and set out annual reporting requirements. A copy of the bill can be found at: http://mgaleg.maryland.gov/2015RS/Chapters_noln/CH_378_sb0714t.pdf

In the 2014 Legislative Session, the General Assembly enacted the following:

- **SB908/HB1345, Chapters 359 and 360, Acts of 2014 - Electric Vehicles and Recharging Equipment - Rebates and Tax Credits**

  This bill extended the excise tax incentive for three (3) years until June 30, 2017 and amended the credit to relate the amount credited to the battery capacity of the vehicle. An electric vehicle would receive a credit of $125 per kWh of capacity up to a cap of $3,000. It also converted the Income Tax Credit for EVSE to a rebate program that includes installation costs in the incentive calculation, remove the provision limiting businesses to a maximum of 30 chargers, and increases the residential and commercial caps. Copies of the bills can be found at:

http://mgaleg.maryland.gov/2014RS/Chapters_noln/CH_359_sb0908t.pdf and http://mgaleg.maryland.gov/2014RS/Chapters_noln/CH_360_hb1345e.pdf

In the 2013 Legislative Session, the General Assembly enacted the following:

- **SB 600/HB836, Chapter 64, Acts of 2013: Vehicle Laws –Electric Vehicles**

  This bill, in addition to harmonizing variations in the definition of "plug-in electric drive vehicle" that appeared in various sections of the Maryland Code, extended the termination date for the exemption allowing the use of Maryland's High Occupancy Vehicle (HOV) lanes by PEVs, regardless of the number of passengers, to September 30, 2017. It also extended the tenure of the Council to June 30, 2015. A copy of the bill can be found at: http://mgaleg.maryland.gov/2013RS/Chapters_noln/CH_64_sb0600t.pdf

- **HB 791/SB728, Chapter 389, Acts of 2013: Tax Credits – Electric Vehicles – Extensions**

  This bill extended the existing tax credits that incentivize the purchase of PEVs and their charging equipment. The credit against the State income tax for PEV charging equipment was extended through tax year 2016. The credit against the motor vehicle excise tax was extended to July 1, 2014 and tied the amount of the credit allowed to the size of the vehicle's battery capacity. A copy of the bill can be found at: http://mgaleg.maryland.gov/2013RS/Chapters_noln/CH_389_hb0791e.pdf