Maryland Department of Transportation
The Secretary's Office

Martin O'Malley
Governor

Anthony G. Brown
Lt. Governor

James T. Smith, Jr.
Secretary

January 14, 2014

The Honorable Martin O'Malley
Maryland Governor
State House
Annapolis MD 21401-1991

Dear Governor O'Malley:

Please see the attached report from the Maryland Electric Vehicle Infrastructure Council (Council). This interim report was prepared in response to requirements enacted by SB 600 and HB 836, Chapters 64 and 65, Acts of 2013. The Maryland Department of Transportation (MDOT) provides staff support to this Council with the assistance of the Maryland Energy Administration. The language directs:

> *"(h)(1) On or before December 1, 2013...the Council shall submit interim reports of its work and recommendations to the Governor and, subject to § 2-1246 of the State Government Article, the General Assembly."*

If you have any questions concerning this report, please contact Mr. Donald A. Halligan, MDOT Office of Planning and Capital Programming Director, at 410-865-1275 or by email to dhalligan@mdot.state.md.us. Of course, you should always feel free to contact me directly.

Sincerely,

James T. Smith, Jr.
Secretary

cc: The Honorable Edward J. Kasemeyer, Chair, Senate Budget and Taxation Committee
The Honorable Norman Conway, Chair, House Appropriations Committee
Mr. Donald A. Halligan, Director, Office of Planning and Capital Programming, MDOT
Ms. Abigail Ross Hopper, Director, Maryland Energy Administration

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The Honorable Thomas V. "Mike" Miller, Jr.
President, Maryland Senate
State House, H-107
Annapolis MD 21401-1991

The Honorable Michael E. Busch
Speaker, Maryland House of Delegates
State House, H-101
Annapolis MD 21401-1991

Dear President Miller and Speaker Busch:

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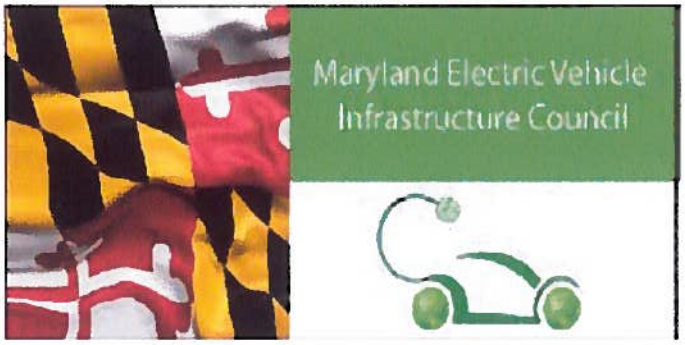

INTERIM REPORT

Presented to

Governor Martin O'Malley

and the

Maryland General Assembly

By the

Electric Vehicle Infrastructure Council

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

January 1, 2014

Staffed by the Maryland Department of Transportation

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Appendix A: Current Council Members

I Background of the Council

The 2011 session of the Maryland General Assembly adopted, and Governor O'Malley signed into law, Senate Bill 176, Chapter 400, Acts of 2011, which established an Electric Vehicle Infrastructure Council (Council). Specifically, this law requires the Council to:

1. Develop an action plan to facilitate the successful integration of electric vehicles into the State's transportation network.
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.
3. Develop a recommendation for a Statewide charging infrastructure plan, including placement opportunities for public charging stations.
4. Increase consumer awareness and demand for electric vehicles through public outreach.
5. Make recommendations regarding monetary and nonmonetary incentives to support electric vehicle ownership and maximize private sector investment in electric vehicles.
6. Develop targeted policies to support fleet purchases of electric vehicles.
7. Develop charging solutions for existing and future multi-dwelling units.
8. Encourage local and regional efforts to promote the use of electric vehicles and attract federal funding for State and local PEV programs.
9. Recommend policies that support PEV charging from clean energy sources.
10. Recommend a method of displaying pricing information at public charging stations.
11. Establish performance measures for meeting PEV–related employment, infrastructure, and regulatory goals.
12. Pursue other goals and objectives that promote the utilization of electric vehicles in the State.

II Overview of Council Activities

The two-year law took effect July 1, 2011, and expired June 30, 2013. During that time, the Council held sixteen meetings chaired by Mr. Darrell Mobley, then Deputy Secretary of the Maryland Department of Transportation (MDOT), which culminated in a Final Report to the Governor and the General Assembly on December 1, 2012. That report included the required recommendation for a Statewide Charging Infrastructure Plan along with an Action Plan of thirty-two recommendations intended to provide sufficient support to reach an ambitious goal of 60,000 PEVs on Maryland's roads by 2020.

In addition to the Infrastructure and Action Plans, the Council recommended legislation in both the 2012 and 2013 sessions of the General Assembly to address near term issues. In response to the Council's recommendations, in the 2012 Legislative Session, the General Assembly enacted the following:

- **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 Public Service Commission (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 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

III Changes to the Council Membership

There have been many changes in Council membership since January 1, 2013. Chairman Mobley resigned from MDOT on June 30, 2013 and the chairmanship has been assumed by Mr. Wilson H. Parran, Deputy Secretary for Administration and Operations of MDOT. Deputy Secretary Parran's first meeting with the Council was held on October 1, 2013. Seven additional members have also left the Council and,

in some cases, replacements are still being sought. The current membership of the Council is attached as Addendum A.

IV Status of Electric Vehicle Market and Infrastructure

There has been a significant increase in the number of PEVs available for sale in Maryland. Only two models (Nissan Leaf and Chevrolet Volt) were readily available in 2011. There are now many more models available in Maryland, including:

- Ford Focus Electric
- Ford Fusion Energi
- Ford C-max
- Mitsubishi iMiEV
- Smart Electric Drive
- Tesla Motors Model X
- Tesla Motors Model S
- Toyota Plug-in Prius

There are additional PEV's available in other parts of the country that are likely to become available here in the future including:

• Honda Fit EV	Only sold in California and New York
• Toyota 2nd generation RAV4 EV	Available only in California
• Volkswagen Models	Currently sold in Europe but not in the United States
• Chevrolet Spark	Currently sold in California and Oregon

In the last year, the number of publically available chargers (publically funded and commercial) in Maryland has increased from 134 to 440. That number is expected to continue to rise as a result of several ongoing projects. The Maryland Energy Administration (MEA) secured $1 million in funding to install charging at MARC and Metro Stations during the coming year. Since these locations serve primarily long-term parking, they will be a mix of Level 1 and Level 2 chargers (low to moderate power). Additional initiatives are underway to facilitate the installation of fast-charger stations by commercial ventures along Maryland's interstate highways in accordance with the Council's Statewide Infrastructure Plan recommendations.

Maryland is at the forefront in PEV promotion on the East Coast. The Northeast and Mid-Atlantic states are working together to coordinate regional, state and local planning to ensure a consistent experience for PEV users. One measure of that interstate cooperation has been the execution of a Memorandum of Understanding (MOU) by the Governors of eight states including Maryland in October 2013. The MOU memorializes the states' commitment to establish a multi-state task force and develop an action plan to facilitate development of a regional charging infrastructure and expansion of the Zero Emission Vehicle market.

V Ongoing Council Activity

The Council's activities since the close of the legislative session have focused on advancing the recommended actions and research efforts contained in the 2012 Report. Of the four full Council meetings to date, three have been used for information gathering and discussion, while smaller workgroups have been formed to implement specific recommendations. A fourth meeting was held specifically to decide on legislative proposals.

Full Council Meeting Topics Covered in 2013		
Meeting #1	June 19, 2012	• Electric Taxicab concept proposal • Workgroups organized
Meeting #2	October 1, 2013	• Alternative Vehicle Financing Initiative • BGE and Pepco pilots for PEV Time of Use rates • Nissan's market experience with the Leaf
Meeting #3	November 13, 2013	• Planning criteria for PEV charging at transit stations • Multi-state MOU & other Maryland EV projects • Workgroup activity • 2014 legislative proposals • PEV outreach
Meeting #4	December 5, 2013	• 2014 Legislative proposals

Two implementation workgroups were organized at the June meeting.

The Workplace Charging group, lead by Mr. Fred Hoover (MEA) is examining the issues, challenges, and opportunities to develop a workplace or employer charging program to facilitate deployment of electric vehicles. Besides home charging, the next best charging opportunity for electric vehicles is at a place of employment. Employers who control their parking facilities are prime opportunities for development of workplace charging programs. By offering electric vehicle charging for their employees, either for free or for a nominal fee, employers can provide a benefit for employee retention as well as demonstrate environmental stewardship.

The Workplace Charging group consists of members of utilities, government, and charging station providers. The Group had a presentation from US Department of Energy officials about DOE's national partnership program to promote employee charging. DOE's partnership members include several national companies with branches in Maryland. The group will seek companies either from these national entities or locally based companies to participate in potential demonstration projects for workplace charging.

The Workplace Charging group will develop the rationale and potential benefits to employers to participate in a workplace charging program. The approach will include benefits to participating companies regarding employee morale and retention, environmental stewardship and economic benefits. Potential government assistance with installation and permitting of charging stations, as well

as company recognition for participation, will be included in the outreach effort to employers. Meetings over the course of 2014 will finalize the approach to companies and engage potential demonstration participants.

The Local Government Interface group, lead by Ms. Kathy Kinsey (MDE) has begun reaching out to local governments, using guidance materials developed by the Transportation and Climate Initiative (TCI). Representatives of the Workgroup met with county planning directors or their designees in September 2013 to discuss initiatives to amend local government planning and zoning requirements to provide for charging infrastructure in new developments and the existing built out environment. A second meeting with municipal and county planning representatives took place on December 4, 2013.

A third workgroup group was formed at the October 1st meeting to examine the issue of charging in condominium developments. Under the Maryland Condominium Act, each condominium association is unique. This has the effect of making the installation of charging infrastructure extremely (and perhaps needlessly) complex. Some Council members advocate legislation similar to that of Oregon that would mandate that Condominium Association's allow the installation of equipment. It was noted that this issue had come up previously in the local government discussions, but that it was likely that extensive advance outreach would be needed if meaningful legislation on this were to be considered. It was agreed that a workgroup would develop a plan for going forward with this concept, with the potential to draft legislation for the 2015 General Assembly.

Also at the October 1st meeting, following a presentation by Ms. Sarah Dougherty of the Center for Climate and Energy Solutions on The Alternative Vehicle Financing Initiative, the Council had a discussion on financing options for PEVs. One of the Council's previous recommendations was that the State should explore opportunities to reduce the upfront costs of PEVs and charging infrastructure installation through public/private financing.

One of the options discussed involved an innovative approach to leveraging public-sector resources to achieve greater investments in given energy sectors, the use of a "energy investment partnership" or, as more commonly known, a "green bank." A green bank may be established to incentivize or catalyze private-sector investment in practically any clean energy sector. The determination to focus efforts on a particular clean energy sector would be a policy decision based on a perceived need or lack of affordable or accessible capital to promote project development.

Assuming sufficient authority and funding, a green bank could establish a number of credit enhancements to attract investment or leverage private-sector financing. With respect to PEVs and their infrastructure , a green bank could deploy resources to facilitate charging station deployment and development, lower borrowing costs for prospective buyers (including fleet purchasers), or some combination of these or other options. For instance, a green bank could work with car loan providers to establish a credit enhancement for buyers. Other options—including some more creative program designs—are certainly possible, depending on the actual authority and funding bestowed on the green bank and the enthusiasm for investment from the private sector.

VI Recommendations for 2014 Legislation

The Council recommends that legislation be introduced to address the following three issues at this time.

Excise Tax Credit Extension and Amendment

- This incentive should be extended for three (3) years until June 30, 2017.
- The credit should be amended to relate the amount credited to the battery capacity of the vehicle. A vehicle would receive a credit of $125 per kilowatt hour (kWh) of capacity up to a cap of $3,000. Current models available would result in credits as follows:

Make	Model	kWh	$125/kWh
Ford	Cmax	7.6	$950
Honda	Fit	20	$2,500
Ford	Focus	23	$2,875
Smart	ForTwo	17.6	$2,200
Ford	Fusion	7.6	$950
Mitsu.	MIEV	16	$2,000
Nissan	Leaf	24	$3,000
Tesla	Model S	40	$5,000*
Toyota	Prius	4.4	$550
Chevy	Volt	16	$2,000

* Currently the Tesla Model S is the only vehicle for which the calculated credit would exceed the cap.

Rational: By relating credits directly to battery capacity, vehicles will be incentivized according to their capacity for electric miles traveled. The previous tiers provided an uneven incentive that rewarded some vehicles and technologies more than others. Credit based on battery capacity incentivizes the purchase of plug-in electric vehicles in general, provides a "technology neutral" approach and incentivizes manufacturers to increase battery capacity in the most cost effective manner. Extending the credit for three (3) years provides market support for PEV sales through 2017.

Income Tax Credit for EVSE Amendment

- Convert income tax credit to a rebate program
- Include installation costs in the incentive calculation
- Remove the provision limiting businesses to a maximum of 30 chargers
- Increase the residential and commercial caps
    - Residential: 50% up to $900
    - Commercial: 50% up to $5,000

Rationale: This credit has been underutilized since its inception. Comments received indicate that the credit provides only a marginal benefit relative to the total cost of equipment, permitting and installation. Delay in receiving the benefit until the end of the tax year further reduces its attractiveness.

Amendment to the Maryland Building Performance Standards (MBPS)
Require the Department of Housing and Community Development Codes Administration to propose a mandatory building standard that requires some percentage of parking in new development, or substantial redevelopment, of commercial and multi-family residential properties with parking to be built and wired to be EVSE-ready.

Rationale: Retrofitting existing parking for apartments, condo developments or commercial developments can be very costly, especially in urban areas. This has contributed to reluctance on the part of property managers to accommodate tenants with EVs. Inclusion of EVSE readiness in the building phase is more cost effective than retrofitting existing parking.

VII Future Meeting Topics

In addition to the ongoing workgroups, the Council has identified a number of issues that may require legislation, but are not ripe for decision making at this time. These issues will be the subject of meetings in 2014.

Future Meeting Topics
• Open Access and Interoperability of Charging Networks • Embedded metering inside EVSE: opportunity for low cost and consumer choice • Condominium Legislation • PEV Outreach