

# Maryland's Electric Vehicle and EV Infrastructure Developments

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## Maryland EV planning began in 2009

- ARRA funding used in 2010–2012 to support EV planning and installation of public Level 2 EV charging stations
- Stakeholder outreach:
  - ✧ State and local governments, sustainability offices, regional economic development groups
  - ✧ automobile manufacturers and dealers
  - ✧ manufacturers of electric vehicle charging equipment, small businesses and large
  - ✧ utilities
  - ✧ electrical workers
  - ✧ environmental and energy experts
  - ✧ real estate developers

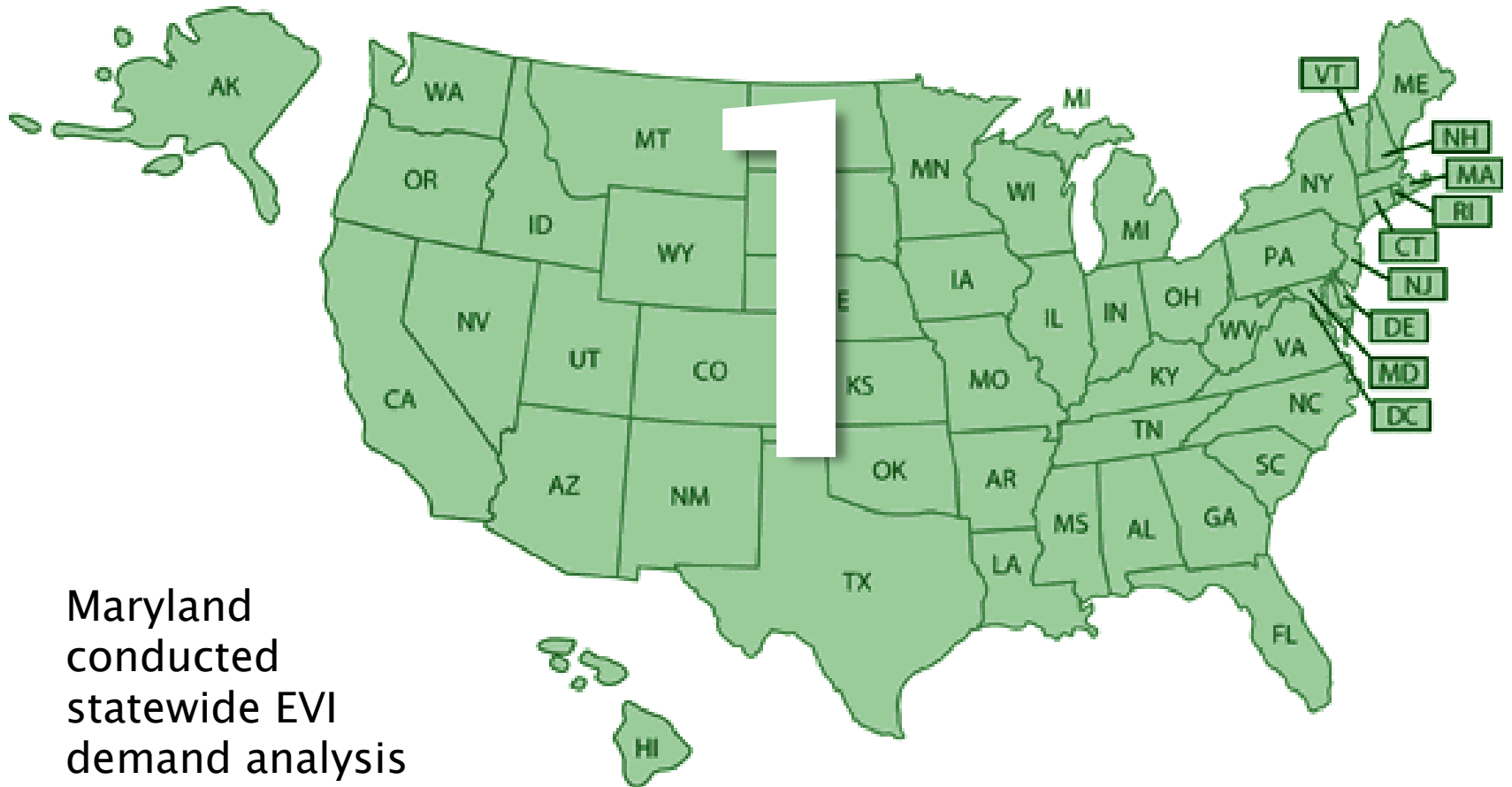


## Maryland EVI Planning Continued in 2011

MD Legislature created the Maryland Electric Vehicle Infrastructure Council in 2011, with a charge to study and report out on what Maryland should do to promote electric vehicles and EV infrastructure development. The Council's Final Report Included:

- An *Action Plan* to expand the adoption of plug-in electric vehicles (PEV) with near term, intermediate and long term goals; and
- A *Statewide Infrastructure Plan* to guide public investment in the development of a charging infrastructure network;

# Reference for Consideration



Maryland  
conducted  
statewide EVI  
demand analysis


# Estimating EVI Demand in MD

## ▶ Questions Addressed

### ◦ Technical Analysis

- What is the Potential Market (given in a range) for Electric Vehicles?
- Given that market, how many and what type of chargers will be needed to satisfy needs?

### ◦ Intuitive Assessment

- What opportunities exist to provide for through/visitor trips?
  - Where are potential locations for fast-chargers to accommodate these trips?
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# Estimating Demand –Actual Market Factors

## Enablers

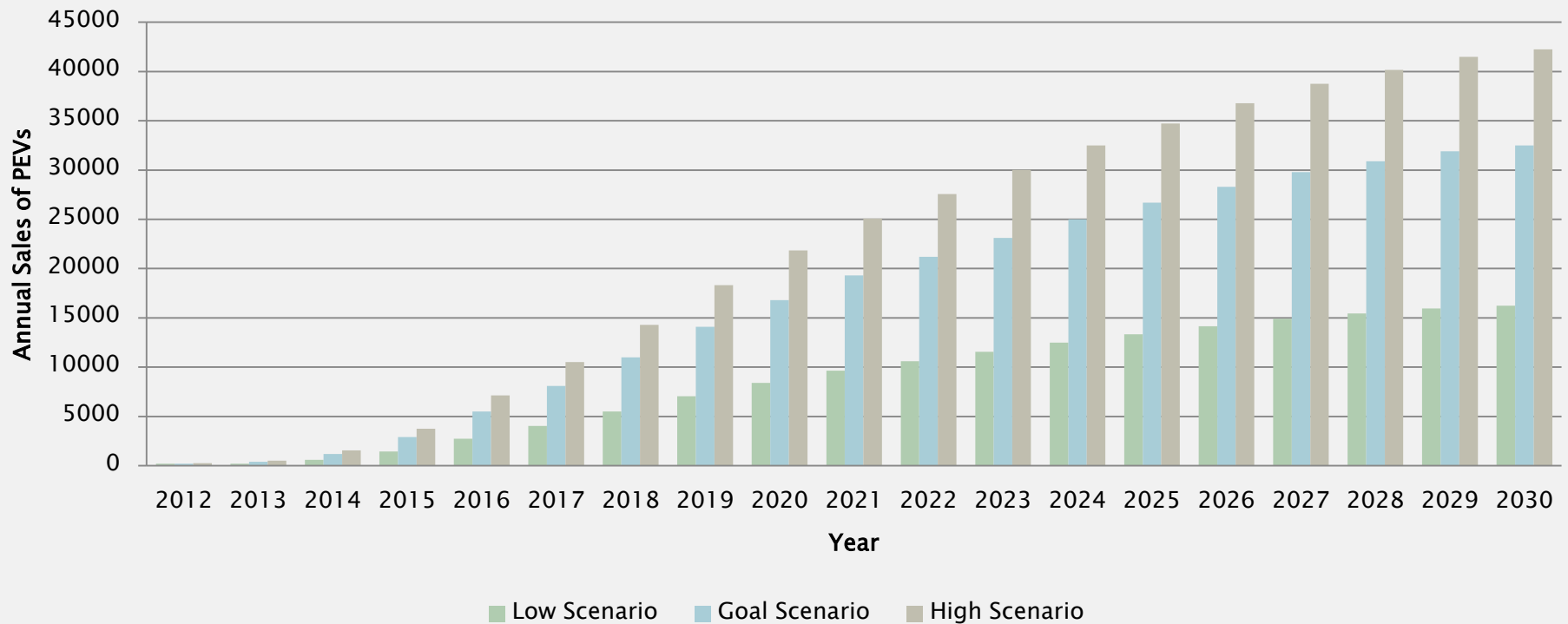
- ▶ Federal and state incentives
- ▶ Non monetary incentives (HOV lanes, Parking)
- ▶ Higher Gas price (or tax)
- ▶ Emission regulation
- ▶ International market

## Barriers

- ▶ Price and cost of ownership
  - Battery cost
  - Electricity cost
- ▶ Charging infrastructure
  - MDUs
  - Old homes
- ▶ Range needs
- ▶ Industry slow change (EV supply)

# Scenarios for EV Growth in Maryland

## Low, Medium (Goal) and High EV Sales Scenarios for Maryland



# Maryland EV Action Plan Recommendations



## Extend Maryland's current incentive programs:

- o Excise tax credit – A credit of up to \$2,000 against the motor vehicle excise tax for certain PEVs. Extend the program's expiration date for an additional three years to July 1, 2016.
- o Electric Vehicle charging station income tax credit - allows a State income tax credit of up to \$400 for 20% of the cost of electric vehicle charging equipment. Extend the program for an additional three years through December 2016.
- o HOV lane use permits for PEVs – Extend the program from September 30, 2013 to September 30, 2020.





## Maryland EV Action Plan Recommendations

### State Fleets

- Develop goals for State agencies to increase the number of zero-emission vehicles in the State fleet through the normal course of fleet replacement so that at least 10% of fleet purchases of light-duty vehicles be zero emission by 2020 and at least 25% of fleet purchases of light-duty vehicles be zero-emission by 2025.
- Direct the Department of Budget and Management (DBM) to investigate:
  - ✧ Potential for leasing PEVs
  - ✧ Bulk purchase agreements, with local government
  - ✧ Bulk purchase or lease agreements with the North East corridor states.



## Maryland EV Action Plan Recommendations

### Education and Outreach

- A State website for Maryland-specific PEV information and resources;
- Educational workshops and webinars for developers, property managers and homeowner associations about the benefits of providing charging for residents;
- Guidance documents for local governments: Based on the TCI templates for Infrastructure Planning Guide for Local Governments; Urban and Multi-unit dwelling charging solutions and best practices for local governments, etc.



## Maryland EV Action Plan Recommendations

### Policy and Coordination

- Continue the efforts of the Council through 2015,
- Create a Task Force within the Council to study the issues and opportunities presented by workplace and urban charging and develop solutions and best practices,
- Create 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.
- Engage local governments in integrating PEV infrastructure into existing regional and local planning processes, such as regional transportation plans, regional (nonattainment area) action plans, local comprehensive plans, zoning, building and other ordinances.

# Maryland EV Action Plan Recommendations



## Local Government Solutions

Revise Zoning and Planning Codes 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.

Review historic district restrictions for the existence of provisions that could effectively prohibit PEV charging stations.

Facilitate on-street charging, by building on the municipal parking permit model for residential on-street parking with charging.

Implement measures to discourage overstaying to ensure equitable access to public chargers.



## Maryland EV Action Plan Recommendations

### Urban Charging:

In urban areas, investigate options for wiring existing publically and privately owned garages for charging.

Pilot Projects: Recognizing that up to 46% of Maryland residents do not have private access to an electrical outlet, pilots could demonstrate options for shared use of existing parking facilities, allowing urban residents to park & charge at night in facilities that are used for business or employment during the day.

Establish a grant program to assist in the funding of Electric Vehicle Supply Equipment (EVSE) installation and the initial procurement of transaction management software for multi-unit dwellings including apartments, condominiums and managed community parking.



## Maryland EV Infrastructure Plan

Promote the establishment of adequate PEV charging infrastructure to support an ambitious goal of 60,000 PEVs on the road by 2020.

Total chargers needed statewide, excluding home chargers, is estimated at 35,190 to meet that demand.

Of these, 120 locations were identified to accommodate tourism and through travel in locations such as rest areas, along major roads, and at tourism destinations serving more than 500 visitors per year.

Anticipates that many of these chargers would be installed by private sector parking managers driven by consumer demand in locations such as parking garages and shopping malls, and by large employers that provide parking.

# Still to Come

- ▶ Sell more EVs! (1 100 registered)
- ▶ Convert State fleets and Mitigate congestion
- ▶ Improve EV wayfinding
- ▶ Develop MD EV website
- ▶ Promote EV–PV–ES
- ▶ Advance EV outreach and education (YES Corps)



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