

# Plug-in Electric Vehicles: State DOT Policies and Incentives

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*Executive Workshops on Strategies and Best Practices for State  
Departments of Transportation to Support Commercialization of  
Electric Vehicles and Infrastructure*



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- Handout: Overview
- DOT Incentives and Policies
  - DOT HOV/HOT Lanes
  - Parking
  - Tolling
  - Public Charging Infrastructure
  - Public Fleets
  - Other Roles: Electric Vehicle Education, Collaboration, etc.

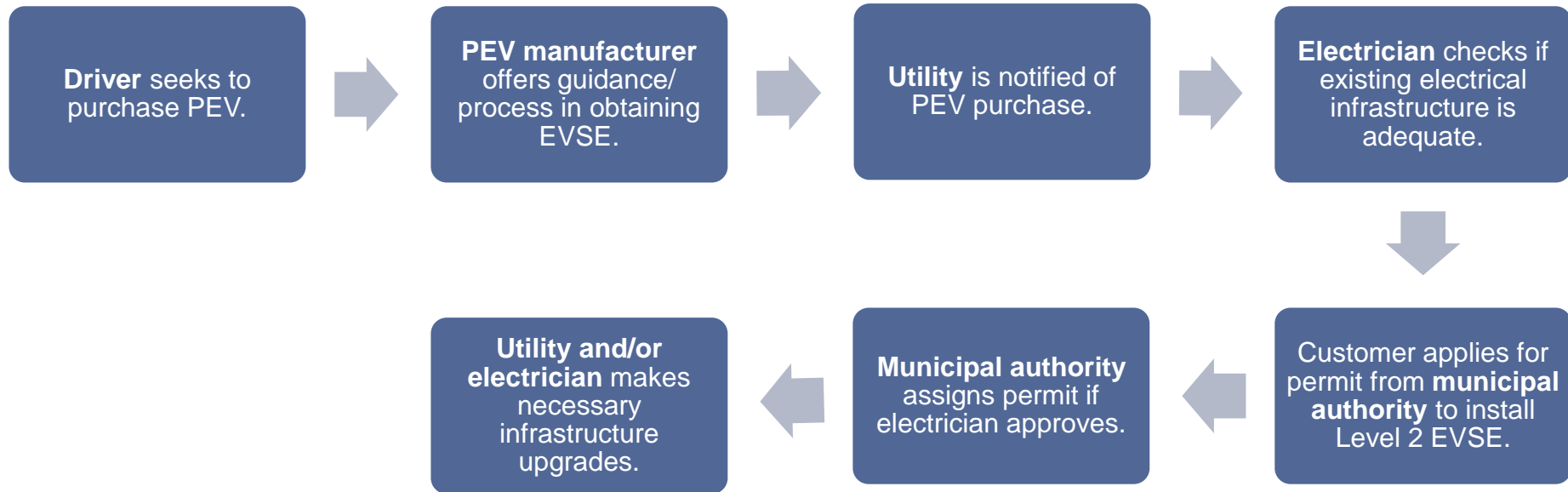


- Permitting and Inspections Process for EVSE installation
  - Auto dealer, automaker, charging infrastructure provider, municipal building authority, local utility, state permitting authority
- Charging build-out
  - Automaker, homeowner (including Homeowner's Association), charging infrastructure provider, parking lot owner, auto dealer, regional development council, utilities, state public utility commission, local businesses, state government including DOT
- Standards
  - International standards bodies such as the IEEE and the Underwriters Laboratory, state and local legislative bodies, state building code authority, state and local departments including DOTs
- Finance
  - Charging infrastructure provider, Public Utility Commissions (rulings), private corporations, Federal

# Permitting and Installation Process



## Example: Permitting and Installation Process



- **What is the justification for PEV exemptions in HOV/HOT lanes?**
  - 13 States with HOV lane exemptions for PEVs: AZ, CA, CO, FL, GA, HI, MD, NC, NJ, NY, TN, UT, VA
  - SAFETEA-LU Section 1121: allows state flexibility in deciding HOV use
    - Reauthorization of SAFETEA-LU also directed EPA to create guidance for state HOV lane exemptions. PEVs, as ILEVs/ZEVs, qualified for exemption.
  - Some HOV lanes may be underutilized. Allowing PEVs increases utilization, thus decreasing congestion.
  - PEVs can emit no tailpipe emissions.
    - Some HOV lanes funded using Congestion Mitigation and Air Quality funds.
    - Clean Air Act amendments of 1990: HOV lanes an appropriate solution for areas with air quality problems - bettering air quality, which PEVs also do, is historically within the purpose of HOV lanes.

- **Restrictions on HOV lanes**

- Title 23 Section 166 (d)(2)(a). Degradation: Minimum average operating speed must be 45 miles per hour for HOV facilities with speed limits greater than 50 mph and not more than 10 mph below the speed limit for a facility with a speed limit less than 50 mph.
- If HOV lanes becomes degraded, by law, state must limit or discontinue use of lane by HOT vehicles/low-emissions vehicles, or take other actions that bring the lane back to the Federal standard.

- **PEV tolling on HOV/HOT lanes**

- Title 23 Section 166: PEVs may be tolled on HOV (or HOT) lanes.

- **California case example**

- 85,000 limited quantity “yellow sticker” exemptions at \$8 each for first-generation HEVs.
- Resale value fetched premium of \$1,000 to \$1,500.
- “Yellow sticker” decals for hybrid electric vehicles expired in July 2011.
- BEVs and certain AFVs now qualify for white stickers, while next-gen HEVs and PHEVs now qualify for green stickers – expires January 1, 2015.



40,000 in quantity  
Volt, Plug-in Prius



Unlimited in quantity  
ILEVs: BEVs, CNG, fuel cell

- **Statutes**

- Arizona Revised Statutes 28-876: “A person shall not stop, stand or park a motor vehicle within any parking space specially designated for parking and fueling motor vehicles fueled exclusively by electricity unless the motor vehicle is powered by electricity...”
- Arizona Revised Statutes 28-877: “A person who is driving a vehicle powered by an alternative fuel may park without penalty in parking areas that are designated for carpool operators as defined in section 28-4032.”

- **DOTs and parking**

- In lieu of statute, some state DOTs (AZ, NC) have authority to develop “Model Ordinance Guidance” for municipalities and counties.



- **What is the role of DOTs in creating public charging infrastructure?**
  - Charging in residential areas and workplaces constitute the minimum approach towards charging infrastructure.
  - DOT authority applies more to highway and corridor charging than workplace and residential charging.
  - TIGER
    - In 2010, ODOT received \$2 million from TIGER II, of which most funding was used to deploy nearly two dozen DC fast charge stations for electric vehicles.
  - ARRA
    - WSDOT's \$1.32 million grant from ARRA via Department of Commerce to build the West Coast Green Highway.

- **How do states build charging stations at rest stops?**
  - Rest stops are prohibited from commercialization by law.
  - Charging that is run by private entities are prohibited from installation at rest stops.
    - Caveat: Some East Coast highways were in place before Federal Aid Highway Act of 1956 so they can have private charging infrastructure.
  - West Coast Green Highway built private charging stations off-ramp
  - NCDOT and West Coast Green Highway has Level 2 stations open to the public at rest areas for public outreach and demonstration purposes.

- **Public fleets can jumpstart PEV demand, but do not qualify for the \$7,500 to \$15,000 tax credit.**
- Auto dealer may claim \$7,500 to \$15,000 tax credit if vehicle is sold to a tax-exempt entity.
  - Amount of tax credit claimed must be disclosed in writing to the purchaser in order to encourage negotiations for passing the savings to the fleet operator.
- Purchasing cooperatives may aid in bulk purchase.
  - Washington State Purchasing Co-op allows for cities, counties, municipalities, and non-profits receiving local, state, or Federal funding to join the purchasing cooperative.



- **2006: Hybrid Electric Vehicle purchase by the Palm Beach County Sheriff's Department**
  - Ford hybrid dealership: passed tax credit savings of over \$10,000 to Sheriff's Department after negotiations
    - In 2007, Sheriff's Department received \$44,000 in passed-on tax credits
  - Toyota hybrid dealership: due to losses from hurricanes, the Toyota dealership did not have any tax liability and could not claim the credit.

# Congestion Mitigation and Air Quality Funds



- Examples: CMAQ has funded both AFV fueling stations and AFV Fleets**

NR = Not Reported

STATE	CMAQ FUNDING	TOTAL COST	PROJECT TITLE	YEAR Funded	VOC (kg/day)	CO (kg/day)	NOx (kg/day)	PM <sub>10</sub> (kg/day)	PM <sub>2.5</sub> (kg/day)
Maine	\$150,000	\$1,305,903	Compressed Natural Gas Fueling Station	2002	-2.8	NR	-2.1	NR	NR
Pennsylvania	\$5,608,000	\$7,010,000	Purchase 12 Alternative Fuel Buses	2002	-3.0	-12.0	-91.0	NR	NR
Connecticut	\$688,800	\$861,000	CT Clean Fuels Program	2005	-6.8	NR	-12.5	NR	NR
New York	\$1,000,000	\$1,250,000	Purchase 3 CNG Transit Buses	2007	-1.5	-7.6	-4.3	NR	-1.4

- **FHWA: interim approval of standardized, optional charging station sign**
  - ODOT and WSDOT: Request to FHWA to distinguish sign indicating PEV charging facility from previous general FHWA sign indicating alternative fuel vehicle refueling
  - Created by Traffic Control Devices Pooled Fund Study



- **Consumer and public education**

- Ex: ODOT's website contains a portal for PEVs, including a variety of relevant resources and links about PEVs.

- **Collaboration**

- DOTs can work and coordinate with other PEV stakeholders, including other state DOTs, utilities, MPOs, regional development council, other state departments, and more.

- **DOTs are a member of a network of diverse PEV stakeholders**
  - Accelerating PEV deployment will require coordination and cooperation from many different stakeholders.
  - In policy and infrastructure, state DOTs hold key potential roles in HOV lanes, infrastructure build-out on highways, public fleet procurement, highway/rest stop parking regulations, and signage.
  - State DOTs also may also help in other PEV actions, including public education, best practices sharing, collaborative work.
  - What are some other roles that DOTs can play?





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