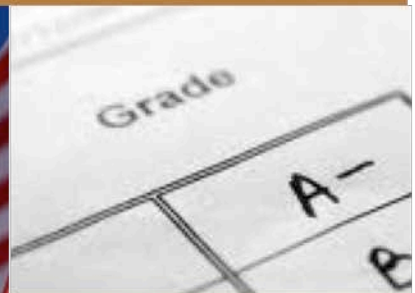


Policies to Promote Electric Vehicles in the Southwest



A State Government Report Card

More widespread adoption of electric vehicles in southwestern states will bring important public benefits, including cleaner air and lower fuel costs. Many innovative policies are already in place across the region and provide excellent examples of what each state can do to more actively support electric vehicles.

By Mike Salisbury
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About SWEEP: The Southwest Energy Efficiency Project is a public interest organization dedicated to advancing energy efficiency in Arizona, Colorado, Nevada, New Mexico, Utah and Wyoming. For more information, visit www.swenergy.org.

SWEEP's Transportation Program seeks to identify and promote the implementation of policies designed to achieve significant energy savings and reductions in greenhouse gas emissions from the transportation sector. SWEEP's work focuses on two general strategies: reducing vehicle miles traveled and improving vehicle fuel efficiency.

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Executive Summary

Widespread adoption of plug-in electric vehicles (PEVs) can provide significant economic and environmental benefits compared to gasoline powered vehicles. However, as an emerging and transformative technology, PEVs face a number of challenges that must be addressed before they can achieve significant market penetration.

While the federal government has provided support for plug-in electric vehicles through tax credits and funding for planning and many local governments are actively involved with on the ground policies (such as zoning, permitting and siting for charging stations), there is a significant and essential role for decision makers in state governments in promoting the adoption of PEVs. Federal and local government efforts to promote PEVs have been well documented, and local government best practices for PEV promotion are available from a variety of sources.¹ However, there is considerably less information available about what state governments are doing to promote PEVs, especially in the Southwest. In the six southwestern states included in this report (Arizona, Colorado, New Mexico, Nevada, Utah and Wyoming) there is significant potential for the state government to adopt more policies to speed the adoption of PEVs. Of the 23 policies considered in this report, only five have been adopted by at least three of the six southwestern states and only four have been adopted by a majority of the southwestern states.

This report identifies best practices and policies that could be adopted by state governments. Table ES-1 shows 23 state-level policies that support the adoption of PEVs and their charging infrastructure and which southwestern states have adopted those policies. Many of the 23 policies are already in effect in at least one southwestern state and each state (except Wyoming) has implemented policies that other southwestern states could adopt.

Adopted policies were assigned a score between 0.5 and 3 points based on the expected impact that policy will have on promoting electric vehicles in that state.

Among the six southwestern states, Colorado has done the most to promote PEVs, offering a substantial tax credit for the purchase of PEVs and a wide range of policies to support their adoption. Colorado received a grade of A-, with its grade rising significantly after five bills related to PEVs passed during the 2013 legislative session. Utah and Arizona have each adopted many policies to promote PEVs and each received a grade of B-. Nevada and New Mexico have each adopted some policies to support PEVs but have significant room for improvement and have received grades of C and C- respectively. Wyoming has not adopted any policies to promote PEVs and therefore received an F.

As there remain many policies that each state could adopt, there is still room for improvement and for all states to work toward receiving an A in the future.

¹ Examples include: the “Colorado Electric Vehicle and Infrastructure Readiness Plan”; “A Toolkit for Community Plug-In Electric Vehicle Readiness”; “Electric Vehicle Deployment Municipal Best Practices Study”; “Ready Set Charge A Guide to EV-Ready Communities”; and “Electric Vehicle Infrastructure: A Guide for Local Governments in Washington State.”

Table ES-1: State-Level Policies Related to Electric Vehicles

Policy	Arizona	Colorado	New Mexico	Nevada	Utah	Wyoming
PEV Rebate	-	-	-	-	-	-
PEV Income Tax Credit	-	3*	-	-	2*	-
PEV Charger Rebate	-	-	-	-	-	-
PEV Charger Income Tax Credit	1	-	-	-	-	-
PEV Exempt from Sales Tax	-	1*	-	-	-	-
PEVs Able to Use HOV Lane	1*	1*	-	1*	1*	-
PEV Manufacturers Tax Credit	-	-	1	-	-	-
Grants to Local Governments for PEVs/Chargers	-	1	-	-	2*	-
NEV Road Access	1	1	1	1	1	-
PEV Access to Carpool Parking	1*	-	-	-	-	-
Reduced License Tax	2*	-	-	-	-	-
Fine for Taking PEV Parking	1	-	-	-	-	-
Fuel Tax Provision for PEVs	-	1	-	-	-	-
Free PEV Parking	-	-	-	1	-	-
Deregulation of Retail Electricity Sales to PEVs	-	1*	-	-	-	-
Clean Car Standards	-	-	1	-	-	-
Exemption from Emissions Testing	0.5	0.5	0.5	0.5*	0.5	-
Building Codes for New Development	-	-	-	-	-	-
Permitting for PEV Chargers	-	-	-	-	-	-
Fleet Acquisition	1*	1*	1*	1*	1	-
PEVs Included in State Bid	-	1	-	1	1	-
Financing for PEVs/ Chargers	-	1	-	-	-	-
Promoting Multi-Family PEV Charging	-	1	-	-	-	-
Total Points	8.5	13.5	4.5	5.5	8.5	0
Grade	B-	A-	C-	C	B-	F

**Policy also applies to other types of alternative fuel vehicles*

Policies to Promote Electric Vehicles in the Southwest: A State Government Report Card

Introduction

This report card is intended to discuss policies adopted in six southwestern states (Arizona, Colorado, New Mexico, Nevada, Utah and Wyoming) to promote plug-in electric vehicles (PEVs), specifically on the work of state governments in supporting and promoting them. Significant progress is being made by local governments to support PEVs, but attempting a comprehensive review of the large number of local government initiatives on PEVs is beyond the scope of this report. While there is a significant body of literature available on best practices for local governments on PEVs and charging infrastructure² there has not been as much focus on state governments. By identifying what has and has not been done across the Southwest at the state level, this report identifies best practices and policies that could be adopted by other state governments.

In addition, Metropolitan Planning Organizations (MPOs), which are responsible for allocating federal transportation funds and helping to coordinate transportation planning in metropolitan areas, also have a role to play in promoting PEVs. An appendix to this report describes the status of MPO policies supporting PEVs across the Southwest.

Benefits of Electric Vehicles

There are currently 17 light duty PEVs available from large scale vehicle manufacturers, with eight more models expected by 2014 (including plug-in hybrids as well as dedicated electric vehicles). Seventeen different vehicle manufacturers offer or will soon offer some model of PEV in the US market.³ With so many diverse models available over the next two years, plug-in electric vehicles have the potential to play an important part in the transportation future of the Southwest. The benefits of PEVs compared to gasoline fueled vehicles include:

- *Greater efficiency:* Compared to gasoline powered internal combustion engines, electric vehicles can travel the same distance using approximately 30% less energy.⁴

² Examples include: the “Colorado Electric Vehicle and Infrastructure Readiness Plan”; “A Toolkit for Community Plug-In Electric Vehicle Readiness”; “Electric Vehicle Deployment Municipal Best Practices Study”; “Ready Set Charge A Guide to EV-Ready Communities”; and “Electric Vehicle Infrastructure: A Guide for Local Governments in Washington State.”

³ FuelEconomy.gov. 2013. Electric Vehicles and Plug-in Hybrids. <http://www.fueleconomy.gov/feg/evsbs.shtml> and <http://www.fueleconomy.gov/feg/phevsbs.html>

⁴ Salisbury, M. 2013. Transportation Fuels for Colorado’s Future: Life-cycle Energy Use and Environmental Impacts of Electric, Compressed Natural Gas, and Gasoline Vehicles. Available at www.swenergy.org

- *Domestic energy source:* About half of the petroleum used in the US is imported, while electricity is produced using almost entirely domestic sources of energy.⁵
- *Reduced emissions:* PEVs have the potential to reduce harmful tailpipe emissions and climate changing CO₂ emissions compared to gasoline powered vehicles.⁶
- *Reduced fueling cost:* Because of their higher efficiency and the low cost of electricity compared to gasoline per unit of energy, electric vehicles can travel the same distance as a typical conventional vehicle at the cost-equivalent of \$1.10 per gallon.⁷

Furthermore, the energy and environmental benefits of electric vehicles are expected to increase as generation of electricity shifts from coal-fired power plants to natural gas and renewable generation.⁸

Why do PEVs need policies to support them?

As a new transportation technology, PEVs will have to overcome a number of barriers to gain widespread adoption.

To help overcome some of these barriers, the federal government has invested resources to support vehicle and battery manufacturing in the United States. The U.S. Department of Energy (DOE) has partnered with private companies to fund the EV Project, which has facilitated the installation of over 8,000 residential and public charging stations in cities across the country. The DOE's Clean Cities program has funded PEV and charging readiness plans for communities across the country while building coalitions to support PEV adoption. In addition, the DOE provides support for educational institutions which provide training and research for electric vehicle technologies.

One of the greatest barriers to PEV adoption is the higher upfront capital cost. The lowest price for PEVs currently on the market is just under \$30,000, significantly higher than the price for comparable dedicated gasoline vehicles. Savings from reduced fuel costs will offset the higher purchase prices over the lifetime of the vehicle, but consumers may not be willing or able to bear the additional initial cost. While the upfront purchase costs are expected to come down as battery technology improves and large scale production of batteries and PEVs expands, PEVs will continue in the short term to cost more than similar gasoline fueled vehicles.

Some of this incremental cost is offset by a federal tax credit, which offers up to \$7,500 (depending on battery size) towards the purchase of a PEV. The federal government also offers a tax credit of up to \$1,000 for individuals and up to \$30,000 for commercial entities for the purchase and installation of electric vehicle charging equipment. At the state level there are a number of policies that can make

⁵ The southwest region produces enough petroleum to meet between 55% and 60% of its own demand.

⁶ Salisbury, 2013. Transportation Fuels.

⁷ Based on a gasoline fueled vehicle with a fuel economy of 30 mpg and an electric vehicle traveling 3 miles per kWh and a kWh costing \$0.11.

⁸ Salisbury, 2013. Transportation Fuels.

owning a PEV more economical. Some policies focus on reducing the upfront cost, while others reduce annual operating costs.

Another barrier is consumer range anxiety: the fear that there will not be charging stations available where they are needed. Policies that expand the network of charging stations will give PEV drivers the confidence to take longer trips and give more people the confidence to purchase an electric vehicle.

Because PEVs and their charging infrastructure are emerging technologies, some current regulations and laws may not be appropriate to address them. For example, in most states only utilities are allowed to sell electricity for vehicle charging (or any other use), which limits flexibility for businesses interested in setting up public charging stations (known as electric vehicle supply equipment, or EVSE). Utility rates which were designed without considering PEV charging may create a disincentive to using a PEV.

Updating and streamlining existing policies which affect PEVs and EVSE will ensure that these technologies do not face a disadvantage compared to existing transportation modes.

In sum, there are three general areas of policy development that can contribute to public acceptance of plug-in electric vehicles:

- *Reducing the initial incremental costs* of purchasing PEVs and EVSE and lowering lifecycle ownership costs;
- *Implementing regulations* that support PEVs and remove barriers to adoption of PEV and EVSE;
- *Making PEV use as or more convenient* than regular gasoline fueled vehicles.

State Policies

State governments across the Southwest have enacted a variety of policies to support the adoption of PEVs and EVSE. We describe these policies below and award points to each state based on the policies that have been adopted, the scope of the policies, and their significance. We use the following scoring methodology:

- *Policies of Limited Scope (0.5 points)*: Policies that receive half a point (0.5) are those that are only applicable in limited parts of the state.
- *Basic Policies (1 point)*: Policies that are supportive of PEVs or EVSE or provide a small financial incentive (less than \$500) for their adoption but are not expected to have a significant impact on PEV adoption are awarded one point.
- *Policies Likely to Spur PEV Adoption (2 points)*: Policies that offer a more significant financial incentive (between \$500 and \$3,000) are awarded two points.

- *Exceptional Policies (3 points):* Those policies that are likely to make a significant difference in PEV adoption (financial incentives over \$3,000, adoption of Clean Car Standards with a mandate for 15% zero emission vehicle sales by 2025) are awarded three points.

We realize that there is an element of judgment in categorizing the policies that have been adopted, but we believe the points we have awarded are fair and justifiable. Table 2 summarizes the total points we award to each state for the 23 policies covered in the report. Based on the total points awarded, we give each state a “grade” according to the scale in Table 1.

Table 1: Range of Grades

Points	Grade
12+	A
8.5 to 12	B
4.5 to 8	C
0.5 to 4	D
0	F

Most of the information used to construct Table 2 was taken from the DOE’s Alternative Fuels and Advanced Vehicles Data Center which tracks state-level incentives and laws for alternative fuel vehicles.⁹

Table 2: State-Level Policies Related to Electric Vehicles

Policy	Arizona	Colorado	New Mexico	Nevada	Utah	Wyoming
PEV Rebate	-	-	-	-	-	-
PEV Income Tax Credit	-	3*	-	-	2*	-
PEV Charger Rebate	-	-	-	-	-	-
PEV Charger Income Tax Credit	1	-	-	-	-	-
PEV Exempt from Sales Tax	-	1*	-	-	-	-
PEVs Able to Use HOV Lane	1*	1*	-	1*	1*	-
PEV Manufacturers Tax Credit	-	-	1	-	-	-
Grants to Local Governments for PEVs/Chargers	-	1	-	-	2*	-
NEV Road Access	1	1	1	1	1	-
PEV Access to Carpool Parking	1*	-	-	-	-	-
Reduced License Tax	2*	-	-	-	-	-
Fine for Taking PEV Parking	1	-	-	-	-	-
Fuel Tax Provision for PEVs	-	1	-	-	-	-
Free PEV Parking	-	-	-	1	-	-
Deregulation of Retail Electricity Sales to PEVs	-	1*	-	-	-	-
Clean Car Standards	-	-	1	-	-	-
Exemption from Emissions Testing	0.5	0.5	0.5	0.5*	0.5	-
Building Codes for New Development	-	-	-	-	-	-
Permitting for PEV Chargers	-	-	-	-	-	-
Fleet Acquisition	1*	1*	1*	1*	1	-
PEVs Included in State Bid	-	1	-	1	1	-
Financing for PEVs/Chargers	-	1	-	-	-	-
Promoting Multi-Family PEV Charging	-	1	-	-	-	-
Total Points	8.5	13.5	4.5	5.5	8.5	0
Grade	B-	A-	C-	C	B-	F

*Policy also applies to other types of alternative fuel vehicles

⁹ Available at: <http://www.afdc.energy.gov/afdc/laws/state>

Among the six southwestern states, Colorado has done the most to promote PEVs, offering a substantial tax credit for the purchase of PEVs and a wide range of policies to support their adoption. Colorado received a grade of an A-. Utah and Arizona have each adopted many policies to promote PEVs and each received a grade of B-. Nevada and New Mexico have each adopted some policies to support PEVs but have significant room for improvement and have received grades of C and C- respectively. Wyoming has not adopted any policies to promote PEVs and therefore received an F.

As there remain many policies that each state could adopt, there is still room for improvement and for all states to work toward receiving an A in the future.

Description of Policies

In this section we offer a comprehensive list and brief description of state-level policies that could be adopted in each of the southwestern states. They are grouped according to the three general areas of policy development that can contribute to public acceptance of plug-in electric vehicles: financial incentives, making PEVs more convenient, regulatory support, and other policies.

Financial Incentives for PEVs/EVSE

- **PEV Rebate:** Consumers receive an upfront discount off the purchase price of a PEV rather than having to wait for a tax credit when they file a state tax return. Rebates would also be available to those with little or no tax burden as well as organizations such as government and non-profits which do not pay taxes.
- **PEV Income Tax Credit:** A PEV purchaser receives the incentive when they file their state income taxes.
- **EVSE Rebate:** This would provide an EVSE purchaser an upfront discount off the price of EVSE rather than having to wait for a tax credit when the purchaser files a tax return. Rebates would also be available to those with little or no tax burden as well as organizations such as government and non-profits which do not pay taxes.
- **EVSE Income Tax Credit:** An EVSE purchaser receives the incentive when they file their state income taxes.
- **PEV Exempt from Sales Tax:** This policy provides a discount to a PEV purchaser at the time of sale and could be set up so that PEVs would be either exempt or face a lower sales tax rate.
- **Grants to Local Governments for PEVs/EVSE:** The state supplies a source of funding to aid local governments in the purchasing of PEVs and EVSE.

- **Reduced License Tax:** Vehicles are often charged a license or registration tax based on a vehicle's assessed value. A reduced license tax creates an incentive for PEV owners whenever they license or reregister their vehicles.
- **Free PEV Parking:** This policy either designates free parking for PEVs or allows PEVs to park free of charge in publicly owned pay areas such as parking meters or pay garages.

Making PEV Ownership More Convenient

- **PEVs Able to Use HOV/HOT Lanes:** This grants PEV drivers the ability to make use of high occupancy vehicle (HOV) lanes if they are driving alone or high occupancy toll (HOT) lanes without paying a toll.
- **NEV Road Access:** This policy allows neighborhood electric vehicles (NEVs, typically along the lines of golf carts) access to local surface streets, generally those with speed limits below 35 or 40 mph.
- **PEV Access to Carpool Parking:** This policy gives PEV drivers access to dedicated carpool parking spaces even if not used for carpooling.
- **Exemption from Emissions Testing:** Many urban areas require vehicles to undergo emissions testing to help meet federal regulations on levels of criteria pollutants. Exempting PEVs which have very low or zero tailpipe emissions adds convenience and saves money for PEV owners.
- **Financing for PEVs/EVSE:** Because of higher capital costs for PEVs, alternative financing mechanisms that rely on fuel and maintenance savings provide ways to increase adoption. Examples of innovative financing for PEVs and EVSE include performance contracting and Property Assessed Clean Energy (PACE) financing.
- **Promoting Multi-Family EVSE:** This makes it easier for residents of multi-family housing units and homeowners associations (HOAs) to install charging stations.

Regulatory Support

- **Fleet Acquisition:** This policy requires that a percentage of state (or other government) fleet vehicles be alternative fuel vehicles (of which plug-in electric vehicles are a subset).
- **Deregulation of Retail Electricity Sales to PEVs:** Most states have public utility laws and regulations that do not allow retailers to sell electricity to consumers unless they are regulated as utilities. This policy allows owners of PEV charging infrastructure to sell electricity directly to EV owners without facing regulation from the state's public utility commission.

- **Clean Car Standards:** The Clean Car Standards adopted by California and originally 13 other states require a minimum level of sales (0.5% in 2013 and rising to 15% by 2025) of zero emission vehicles (such as PEVs).
- **Permitting for EVSE:** This policy establishes a standardized permitting system for EVSE at the state level and allows municipalities or counties to opt in if they so choose.
- **Building Codes for New Development:** State building codes could require higher voltage pre-wiring or an actual EVSE to be located in parking areas of new construction so future EVSE installations are as inexpensive as possible.
- **Plug-In Electric Vehicles Included in State Bid:** The state bid is a price agreement between state governments and vehicle manufacturers that allows states to receive lower prices on the purchase of large number of vehicles. These lower prices are also available to local governments interested in purchasing vehicles using the state bid.

Other Policies

- **Fuel Tax Provisions for PEVs:** Because electricity is not taxed as a motor fuel, vehicle-miles traveled by PEVs do not contribute to state highway funding which is supported principally through taxes on gasoline and diesel. Without policies in place to ensure that PEVs contribute a fair share to highway funding, state transportation departments and traditional highway interests are likely to oppose other policies that promote PEVs.
- **PEV Manufacturer's Tax Credit:** Manufacturers of qualifying PEV or PEV components receive a tax credit based on the cost of producing the PEV or its components.
- **Fine for Taking PEV Parking:** This imposes a set fine on any non-electric vehicle that is improperly parked in a parking space reserved for PEV charging.

Status of PEV Policy in Southwestern States

In this section we describe the policies supporting PEVs in place as of April 29, 2013 in each southwest state.

Arizona

The state of Arizona has passed a number of policies that support PEVs and EVSE. Arizona is the only southwestern state which currently offers a modest (\$75) tax credit for the installation of a PEV charging outlet in an individual's home. Plug-in electric vehicles are allowed use of HOV lanes (if displaying

special plates or stickers from the Arizona Department of Transportation) and are allowed to use parking spaces designated for carpool vehicles. Non-electric vehicles that park in a space designated for PEV parking and charging are subject to a fine of at least \$350. Annual vehicle license taxes are significantly lower (approximately \$480 less for the initial registration and \$2,300 less over the lifetime of the vehicle) than the costs of registering a conventional gasoline vehicle. Neighborhood electric vehicles (NEVs) are allowed access to roads with speed limits up to 35 mph.

In Arizona, electricity sales are subject to the state sales tax, but electricity is currently not subject to the state motor fuel tax. In addition, diesel powered vehicles that are converted to electric power are exempt from the state use tax for the vehicle. In the Phoenix and Tucson metro areas, electric vehicles are exempt from the emissions testing program.

Arizona has adopted strong alternative fuel vehicle purchase requirements for the public sector. For the state and larger cities (population of 1.2 million or more) at least 75% of new fleet vehicles must be alternative fuel vehicles (of which plug-in electric vehicles are a subset) after January of 2012.

Arizona was one of the states that adopted California's Clean Car Standards which established a minimum number of zero-emission vehicles to be sold in the state each year. However, this policy was repealed by the Governor's Regulatory Review Council in January, 2012.

Governor Brewer has convened an Electric Vehicle Policy Working Group to identify barriers and opportunities for plug-in electric vehicles in Arizona.

Colorado

The state of Colorado offers one of the most generous tax credits in the nation (up to \$6,000) for the purchase of a plug-in electric vehicle, with the amount of the credit based on the capacity of the vehicle's battery. There is also a 35% tax credit (up to \$7,500) for the cost of converting an existing vehicle to electric power as long as efficiency is increased by at least 40%. Vehicles over 10,000 pounds which meet federal Low Emission Vehicle standard are exempt from state sales tax.¹⁰

Hybrid vehicles, of which plug-in electric vehicles are considered a subset, can obtain a permit to travel in HOV and HOT lanes (although this program is only available to 2,000 vehicles and is currently full). NEVs are allowed access to roads with speed limits up to 35 mph.

In Colorado, residential electricity sales are exempt from the state sales tax, but commercial electricity sales are subject to the sales tax unless the sale is a resale. Electricity is currently not subject to the state motor fuel tax. Colorado has created a decal program for plug-in electric vehicles so that they pay \$30 annually to fund the state's highway system.

¹⁰ Light duty vehicles weigh less than 8,500 pounds so this incentive does not apply to any current electric vehicles on the market.

In the Denver metro area, electric vehicles are exempt from the emissions testing program. Vehicles that are purchased for the state's vehicle fleet must be alternative fuel vehicles, as long as the base or lifecycle costs are not greater than 10% more than a dedicated petroleum vehicle.

Colorado has a state-level program that provides grants to local governments for the installation of EVSE. Beginning in 2014 this will be funded by a \$20 annual fee on PEV owners. The Colorado Energy Office is offering grants to local governments in 2013 that will cover 80% of the cost of an EVSE installation, up to \$6,260. The initial budget for this effort in 2013 is \$40,000 from state funds (though an additional \$110,000 may be allocated). Additional funding may be provided through a partnership with the Regional Air Quality Council, which has funds available from a federal Congestion Mitigation and Air Quality grant.

Colorado deregulated third-party sales of electricity for consumption by plug-in electric vehicle owners, allowing businesses to sell electricity at public PEV charging stations without being subject to regulation by the Colorado Public Utility Commission.

Colorado has required that residents of multi-family housing units and those living in HOAs not be subject to unreasonable restrictions if they wish to install a charging station on the property.

Colorado supports innovative financing plans to support the purchase of PEVs and EVSE for government vehicles through performance contracting that allows future fuel and maintenance savings to be used to pay the additional upfront costs of electric vehicles and charging stations. State legislation also authorizes Property Assessed Clean Energy (PACE) financing for commercial building owners to purchase EVSE.

New Mexico

The state of New Mexico offers a tax credit of up to 5% of qualifying expenditures for manufacturers of plug-in electric and hybrid electric vehicles, or their components. However, the state does not offer any financial incentives to support the purchase of PEVs. NEVs are allowed access to roads with speed limits up to 35 mph.

In New Mexico, sales of electricity are subject to state sales tax. Electricity is currently not subject to the state's motor fuel tax or the alternative fuel tax.

In 2007, New Mexico adopted California's Clean Car Standards which set a minimum on the number of zero emission vehicles to be sold in the state each year. However, in 2011, the state delayed the implementation of the standards and elected to follow federal guidelines which do not have a requirement for sales of zero emission vehicles.

New Mexico has adopted strong alternative fuel vehicle purchase requirements for the public sector. 75% of new state and educational institution fleet vehicles must be hybrid or alternative fuel vehicles, of which plug-in electric vehicles are a subset. Electric vehicles in Bernalillo County (the Albuquerque metropolitan area) are exempt from emissions testing.

Nevada

The state of Nevada passed a law allowing the Nevada Department of Transportation to set up a program allowing plug-in electric vehicles to use HOV lanes, though no program has been set up as of March 15, 2013. NEVs are allowed access to roads with speed limits up to 35 mph. Local governments in Nevada are required to set up a program that allows plug-in electric vehicles to park for free at public metered parking spaces upon obtaining a decal from the local government. Alternative fuel vehicles (including plug-in electric vehicles) are exempt from emissions testing for the first six years of the vehicle's life.

Nevada does not offer any financial incentives to support the purchase of PEVs. Electricity sales are exempt from state sales tax. Electricity is not currently subject to the state's motor fuel tax or its special fuels tax. The State Office of Energy provided support for trainings in 2011 on installation of EVSE.

In the Las Vegas metro area, electric vehicles are exempt from vehicle emission testing. State law requires that at least 90% of new fleet vehicles purchased by state and local governments (in jurisdictions with population over 100,000) be alternative fuel vehicles (of which electric vehicles are a subset).

Utah

The state of Utah offers a tax credit for up to \$605 for the purchase of plug-in electric vehicles meeting certain air quality and fuel economy standards. State and local government agencies and private businesses may receive grants or loans for the costs of converting vehicles, purchasing a new electric vehicle or installing refueling infrastructure.

NEVs are allowed access to roads with speed limits up to 35 mph. Electric vehicles are allowed use of HOV lanes (if displaying a special decal from the Utah Department of Transportation) regardless of the number of passengers.

In Utah, sales of electricity for commercial and residential use are subject to the state sales tax.

In Salt Lake County, electric vehicles are exempt from emissions testing.

The Utah Division of Administrative Services purchased two Nissan Leafs for use and testing by the state Department of Environmental Quality (DEQ). Six charging stations have been set up at DEQ, three of which are available to the public.

Wyoming

The state of Wyoming currently does not have any policies in place to support plug-in electric vehicles or charging infrastructure.

In Wyoming, sales of electricity are subject to the state sales tax. Electricity is not currently subject to the state's motor fuel taxes.

Policies Not Yet Adopted in Southwestern States

Currently no states in the Southwest offer an upfront rebate (as opposed to tax credits) for plug-in electric vehicles or charging stations. Rebates are more effective at stimulating vehicle sales as the price reduction is immediate (the buyer does not need to wait for to receive a tax refund) and can be used by anyone regardless of tax liability. Currently, the states of California, Hawaii, Illinois and Pennsylvania offer rebates for qualified plug-in electric vehicles. Hawaii also offers rebates for EVSE of up to \$500.

Statewide building codes that require new residential and commercial buildings to have capacity for future EVSE capacity have not been adopted by any southwestern states. Arizona, Colorado and Wyoming are all home rule states, so state government has limited authority over building codes which are largely determined by each local jurisdiction.

No southwestern states have adopted a statewide permitting process for EVSE. Oregon developed a permitting system that streamlines EVSE permitting and that jurisdictions can adopt for their own use.

While New Mexico technically has adopted the California Clean Car Standards, it is not clear whether or when these actually will be implemented. Thus, no southwestern state has truly adopted the clean car standards with the zero emission mandate.

Appendix: Metropolitan Planning Organizations

While metropolitan planning organizations (MPOs) do not play as direct a role as state governments in making policies to support PEVs, there are areas where they can contribute to promoting adoption of PEVs. MPOs have not traditionally played an active role in promoting alternative fuel vehicles and their refueling infrastructure. Their focus has been on improving the efficiency and operation of regional transportation systems. MPOs have promoted programs to reduce vehicle-miles travelled (VMT) by encouraging alternative modes of transportation to single occupancy vehicles such as carpooling, walking, biking and transit. MPOs have also invested in Intelligent Transportation Systems, and HOV and HOT lanes to improve the efficiency of the transportation system.

MPO Acronyms:

MAG: *Maricopa Association of Governments, metropolitan Phoenix, AZ*

PAG: *Pima Association of Governments, metropolitan Tucson, AZ*

DRCOG: *Denver Regional Council of Governments, metropolitan Denver, CO*

MRCOG: *Mid-Region Council of Governments, metropolitan Albuquerque, NM*

RTC-Southern Nevada: *Regional Transportation Commission of Southern Nevada, Clark County and metropolitan Las Vegas, NV*

RTC-Washoe County: *Regional Transportation Commission of Washoe County, metropolitan Reno, NV*

WFRC: *Wasatch Front Regional Council: metropolitan Salt Lake City, UT*

One reason that MPOs are becoming more involved in alternative fuel vehicles is their interest in reducing emissions of criteria pollutants and greenhouse gases. Among the largest MPOs in the Southwest, most (RTC-Southern Nevada, MAG, DRCOG, MRCOG, and WFRC) have the stated goal or objective of improving air quality by reducing emissions from the transportation sector and some (RTC-Southern Nevada and DRCOG) specifically address the goal of reducing greenhouse gas emissions. DRCOG is the only MPO with an explicit goal of reducing greenhouse gas emissions, and the goal is to reduce emissions 60% below 2005 levels by 2035.

As regional organizations, MPOs have a natural ability to serve as organizers of regional work around EVSE planning. MPOs also often produce important data on traffic flows that can be important in locating EVSE in areas with high traffic volumes where drivers park for extended times. A planning process supported by an MPO can help to provide better-located EVSE, thereby maximizing the EVSE investment in a metropolitan area.

Table A-1 lists two specific activities that at least one MPO in the southwest region has undertaken that helps advance PEVs and EV charging infrastructure. Further details are discussed below.

Table A-1: Regional Policies Related to Electric Vehicles

MPO	Role in Planning for EVSE	Funding for Electrification in TIP
MAG	◆	
PAG	◆	
DRCOG	◆	◆
MRCOG		
RTC-Southern Nevada		◆
RTC-Washoe County	◆	
WFRC		◆

Wasatch Front Regional Council (WFRC), metropolitan Salt Lake City

WFRC has not taken an active role in supporting EVs. In the 2012 Transportation Improvement Program (TIP)¹¹ funding was awarded for electric vehicle charging stations at two of the Utah Transit Authority park and ride lots. This funding came from federal TIGGER grant program.

Regional Transportation Commission (RTC) of Southern Nevada, Clark County and metropolitan Las Vegas

RTC of Southern Nevada has identified the promotion of alternative fuels and alternative power vehicles as an objective in its 2030 Regional Transportation Plan. In the current TIP, federal congestion mitigation and air quality (CMAQ) funding is being used to electrify three area trucks stops. RTC-Southern Nevada has also worked with the city of Las Vegas to provide five electric bikes to city employees for daily trips in downtown.

Regional Transportation Commission (RTC) of Washoe County, northern Nevada and metropolitan Reno

RTC of Washoe County is currently working to incorporate long-term charging station needs into the 2035 Regional Transportation Plan.

Arizona

The MPOs in Arizona were in a unique situation as the Phoenix and Tucson metropolitan areas were chosen to be a part of the EV Project in 2009. The EV Project, funded in part by the US Department of Energy, has (as of January 2013) installed 997 public charging stations in Arizona (192 around Tucson and 805 around Phoenix) at no cost to the region. This influx of funding and future charging stations coming on line at approximately the same time created a situation where a centralized planning process aided by the MPOs made a lot of sense. Working with ECOTality, the two MPOs were able to provide travel data that informed the ideal distribution of charging stations across the region.

¹¹ The Transportation Improvement Program (TIP) is federal funding that is dispersed locally by the MPOs.

As the other southwestern metropolitan areas are seeing a more gradual deployment of EVSE, a centralized planning process is less critical, though all regions could benefit from MPOs playing a role in determining where to locate EVSE.

Maricopa Association of Governments (MAG), metropolitan Phoenix

MAG has worked with ECOTality to develop maps of potential public charging stations in the region based on transportation patterns and traffic flows. The MPO also acted as a liaison between ECOTality and the member governments to help ECOTality coordinate their efforts across the region.

Pima Association of Governments (PAG), metropolitan Tucson

One of PAG's regional programs, which educates the public and encourages alternative forms of transportation, is focused on alternative energy and fuel vehicle infrastructure. This includes infrastructure improvements for electric vehicles.

Through the Clean Cities program, PAG developed a working group of EVSE companies, area governments and EV enthusiasts to help with infrastructure deployment. PAG also worked with ECOTality to identify locations for publicly available charging stations.

Denver Regional Council of Governments (DRCOG), metropolitan Denver

DRCOG provides some basic information on the costs and benefits of electric vehicles on their website.

The current Transportation Improvement Program (TIP) is funding a project through the Regional Air Quality Council that will place electric vehicles in local government fleets and provide charging infrastructure in addition to providing public education on available incentives for electric vehicles.

The 2035 Metro Vision Regional Transportation Plan (MVRTP) identifies as an action strategy the support of alternative fuel vehicles. In addition, the MVRTP encourages "the use of alternative fuel sources and clean-burning technology and provision of supporting infrastructure and services for alternative fuels" as a way to improve environmental quality.

Mid-Region Council of Governments (MRCOG), metropolitan Albuquerque

The Metropolitan Transportation Plan (MTP) states that "improvements in vehicle...fuel type are also critical to for addressing air quality and climate change", but qualifies this by saying that these areas are not under the regulatory authority of the MPO. The MTP then states that the MPO could play a role in coordinating regional alternative fuel infrastructure including infrastructure for plug-in electric vehicles. However, it notes that due to the high percentage of coal used in the region's electricity mix there may not be benefits from shifting from petroleum to an electrified transportation sector. On the other hand, the main electric utility in New Mexico (Public Service Company of New Mexico), like other utilities in the region, is moving away from coal-fired power generation and toward cleaner natural gas and renewable energy generation. The MTP contains an Action Item that it will "support plans for implementation of alternative fuels and infrastructure."

Acronyms

BEV – Battery Electric Vehicle

CMAQ – Congestion Mitigation and Air Quality

DOE – Department of Energy

DRCOG – Denver Regional Council of Governments

HOT – High Occupancy Toll

HOV – High Occupancy Vehicle

EVSE – Electric Vehicle Supply Equipment (charging stations)

kWh – kilowatt-hour

MAG – Maricopa Association of Governments

MPO – Metropolitan Planning Organization

MRCOG – Mid-Region Council of Governments

MTP – Metropolitan Transportation Plan

MVRTP – Metro Vision Regional Transportation Plan

NEV – Neighborhood Electric Vehicle

OEM – Original Equipment Manufacturer

PAG – Pima Association of Governments

PEV – Plug-in Electric Vehicle

PHEV – Plug-in Hybrid Electric Vehicle

RTC – Regional Transportation Commission

TIP – Transportation Improvement Program

TOU – Time of Use

WFRC – Wasatch Front Regional Council