

# San Joaquin Valley Plug-In Electric Vehicle Coordinating Council



# History of Electric Vehicles

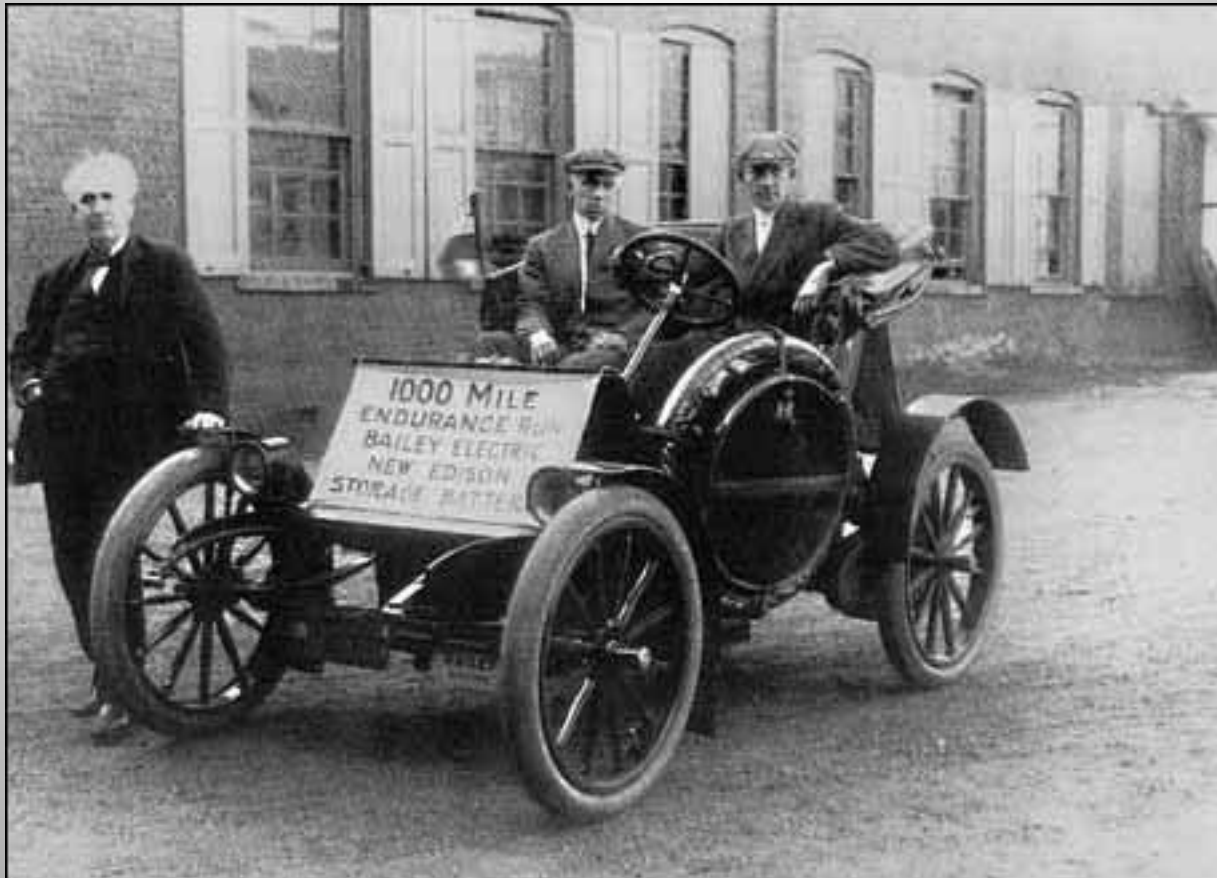
**The horse drawn wagon was the primary mode of transportation between the 1800's and 1900's**



*Courtesy of Southern California Edison*

# History of Electric Vehicles

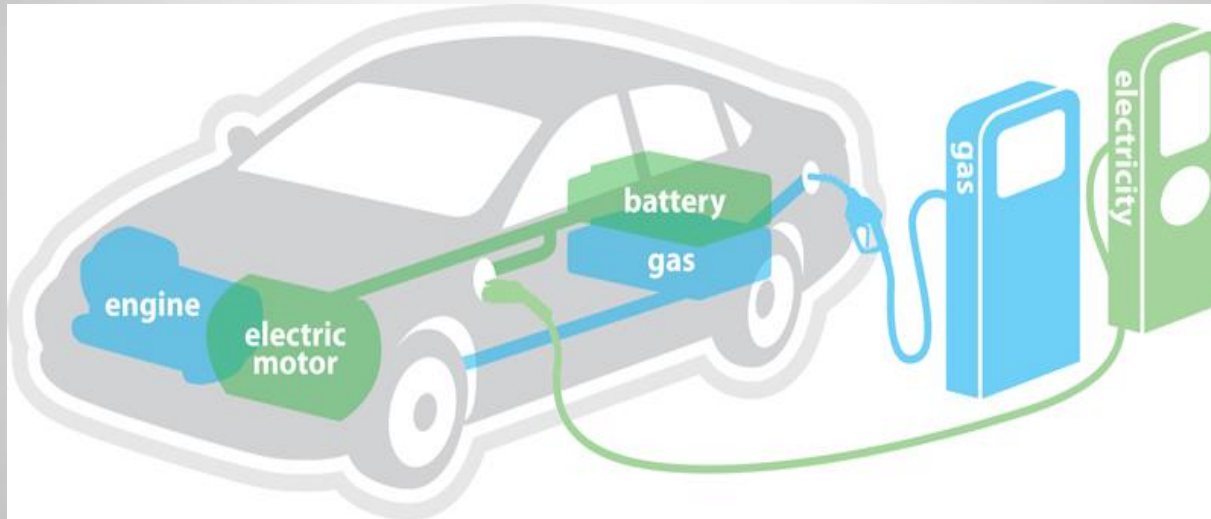
The first successful electric car in the U.S. was built in Des Moines, Iowa by Wm. Morrison in 1881



*Courtesy of Southern California Edison*

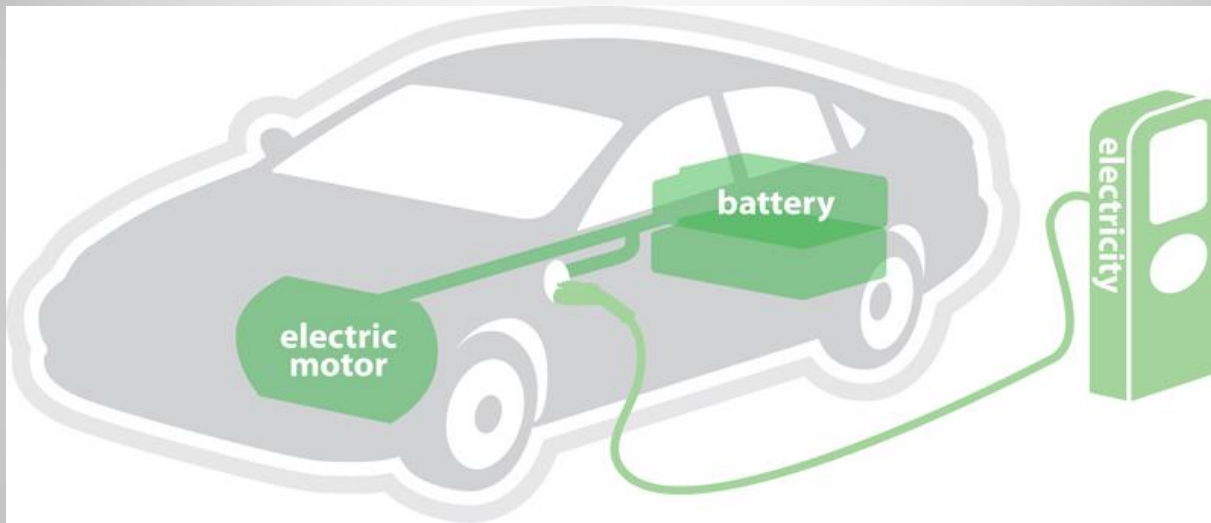
# **What is an Electric Vehicle?**

# Plug-In Hybrid Electric Vehicle (PHEV)



Hybrid vehicles that can plug into the grid so they can operate on electricity as well as an internal combustion engine.

# Battery Electric Vehicle (BEV)



A vehicle that runs on electricity stored in batteries and has an electric motor rather than an internal combustion engine.

# Plug-In Electric Vehicle 101

There are currently more than **20 different EV models** on the market offered by a variety of manufacturers such as:

- ✓ Ford
- ✓ Honda
- ✓ Mercedes
- ✓ Chevrolet
- ✓ BMW
- ✓ Nissan
- ✓ Toyota
- ✓ Tesla

# Plug-In Hybrid Electric Vehicle (PHEV)



Toyota Plug-in Prius  
Average Electric Range: 11 miles  
[fueleconomy.com](http://fueleconomy.com)



# Plug-In Hybrid Electric Vehicle (PHEV)



Chevrolet Volt

Average Electric Range: 38 miles

[fuelconomy.com](http://fuelconomy.com)

# Plug-In Hybrid Electric Vehicle (PHEV)



Ford CMAX Energi  
Average Electric Range: 21 Miles  
[fueleconomy.com](http://fueleconomy.com)

# Battery Electric Vehicle (BEV)



Nissan Leaf

Average Electric Range: 73 Miles

[fueleconomy.com](http://fueleconomy.com)

# Battery Electric Vehicle (BEV)



Toyota Rav4 EV  
Average Electric Range: 103 Miles  
[fuelconomy.com](http://fuelconomy.com)

# Battery Electric Vehicle (BEV)



Tesla Model S  
Average Electric Range: 265 Miles (85kWh battery)  
[fueleconomy.com](http://fueleconomy.com)

# **What are the Economic Benefits of Electric Vehicles?**

# Economic Benefits



- ✓ Volatile Gas Prices
  - Reduce dependence on the pump
- ✓ Lower Fueling Costs
  - Off peak charging Time-Of-Use rates
- ✓ Lower Maintenance Costs
  - No more oil changes, reduced tune ups

# Plug-In Electric Vehicle Incentives

## San Joaquin Valley Air Pollution Control District Incentives

- Public Benefit Grant Program
- Drive Clean! Rebate Program
- Alternative Fuel Vehicle Mechanic Training Component

## California-wide Incentives

- Clean Vehicle Rebate Project (CVRP)
- Hybrid Voucher Incentive Program (HVIP)
- HOV Stickers

## Federal Incentives

- American Taxpayer Relief Act 2012



# San Joaquin Valley Air Pollution Control District Incentives

## Public Benefit Grant Program

- Max **\$20,000** per vehicle with a cap of **\$100,000** per public agency per year for new alternative fuel vehicle purchase (i.e. electric, hybrid, etc.)

## Drive Clean! Rebate Program

- Provides rebates for the purchase of eligible new, clean-air vehicles for residents and businesses of the SJVAPCD
- Rebates under this program range from **\$2,000** for a PHEV to **\$3,000** for a BEV

# San Joaquin Valley Air Pollution Control District Incentives Cont.

## Drive Clean! Rebate Program – Public & Private Infrastructure\*

\* Not yet implemented

- Rebates for purchase and installation of residential and public PEV charging stations

## Alternative Fuel Vehicle Mechanic Training Component

- Program provides incentives and subsidies for the education of personnel on the mechanics, operation safety and maintenance of alternative fuel vehicles, equipment structures, refueling stations and tools involved in the implementation of alternative fuel emission reducing technologies
- Agencies can receive a maximum of **\$15,000** per fiscal year

# California Incentives

## California Vehicle Rebate Project

- Rebates of up to **\$2,500** for California purchasers or lessees of light-duty zero-emission vehicles and plug-in hybrid electric vehicles

## Hybrid Voucher Incentive Program

- Grants vouchers from **\$8,000** to **\$45,000** for the purchase of each eligible hybrid or electric truck or bus
- Fleets in the SJV can add up to **\$30,000** more per voucher

## HOV Sticker

- Until 2015, applicants that purchase or lease qualifying zero emission vehicles can receive an HOV carpool lane sticker allowing single passenger cars to use carpool lanes

# Federal Tax Incentives

## American Taxpayer Relief Act of 2012

- 30% tax credit for the installation of electric vehicle infrastructure in 2012 and 2013, capped at **\$30,000** for businesses and **\$1,000** for individuals.
- A tax credit for 2 and 3-wheeled electric vehicles of 10% of the purchase price, up to a maximum of **\$2,500**

Source: <http://www.govtrack.us/congress/bills/112/hr8/text>

# Electric Vehicle Cost Saving Calculators

Alternative Fuels Data Center	Southern California Edison	Pacific Gas & Electric
<i>Vehicle Cost Calculator</i>	<i>Plug-in Car Rate Assistant</i>	<i>Plug-in Electric Vehicle Calculator</i>
<a href="http://www.afdc.energy.gov/calculator/">http://www.afdc.energy.gov/calculator/</a>	<a href="https://www.sce.com/nrc/pev/index.html">https://www.sce.com/nrc/pev/index.html</a>	<a href="http://www.pge.com/cgi-bin/pevcalculator/PEV">http://www.pge.com/cgi-bin/pevcalculator/PEV</a>

**What is the  
San Joaquin Valley  
Plug-In Electric Vehicle  
Coordinating Council?**

# San Joaquin Valley Plug-in Electric Vehicle Coordinating Council (SJV PEVCC)

- ✓ Grants from Calif. Energy Commission & U.S. Dept. of Energy funded formation of the SJV PEVCC
- ✓ Comprised of:
  - Local Governments
  - Public Agencies
  - Utilities
  - Industry and the Nonprofit Sector
- ✓ **One-year project**



# San Joaquin Valley Plug-in Electric Vehicle Coordinating Council Members

## Metropolitan Planning Organizations

- Fresno Council of Governments
- Tulare County Association of Governments
- San Joaquin Council of Governments
- Merced County Association of Governments
- Stanislaus County Association of Governments
- Kern County Association of Governments
- Madera County Transportation Commission
- Kings County Association of Governments

## Counties

- Fresno County
- Merced County
- Kings County
- Kern County
- Madera County
- Tulare County
- San Joaquin County
- Stanislaus County

## Electric Vehicle Service Providers

- Charge Point
- AeroVironment

## Cities

- City of Visalia
- City of Clovis
- City of Fresno
- City of Stockton
- City of Bakersfield
- City Hanford
- City of Modesto
- Turlock Irrigation District
- City of Tracy

## Energy Utilities

- Modesto Irrigation District
- Pacific Gas & Electric
- Southern California Edison
- City of Lodi Electric Utility

## Energy Non-Profit, Consultants & Businesses

- San Joaquin Valley Clean Cities
- San Joaquin Valley Clean Energy Organization
- CalStart
- Green Motion

## Vehicle Manufacturers

- Coda



# **San Joaquin Valley Plug-in Electric Vehicle Coordinating Council (SJV PEVCC)**

## **What is the Purpose of the SJV PEVCC?**

- ✓ To develop a regionally-accepted comprehensive PEV readiness plan

## **What is a “Plug-in Electric Vehicle (PEV) readiness plan”?**

- ✓ Plan that identifies, reduces and resolves barriers to the widespread deployment of private and public PEV charging stations in the region
- ✓ Addresses barriers to PEV adoption through best practices and fact sheets

# Barriers to Deployment of PEVs and Infrastructure Network

## Major Components of the PEV Readiness Plan

- ✓ Updating zoning and parking policies
- ✓ Streamlining the permitting and inspection processes
- ✓ Updating building codes for EVSE and PEV parking

## Regional PEV readiness plan also includes...

- ✓ Outreach and education component on PEV technology and EVSE installation procedures for local residents and businesses.

For more information, visit [www.energycenter.org/pluginready](http://www.energycenter.org/pluginready)

# SJV PEVCC Goals

- ✓ Increase education and outreach to jurisdictions and consumers
- ✓ Conduct outreach to local governments to recommend integration of PEV and EVSE policies with local transportation, land use plans, and sustainability & climate action plans
- ✓ Provide tools and resources to assist counties, cities, and communities in the region become PEV ready
- ✓ Create and publish recommendations and best practices through on-line information sheets for Valley jurisdictions and consumers
- ✓ Communicate and coordinate regularly with surrounding regions regarding best practices

**Why is the SJV  
PEVCC  
Important?**

# National and State Directives

## 2012 Governor Executive Order

- ✓ Reach **1.5 million** zero emission vehicles (ZEV) in California by 2025

## 2011 State of the Union Address

- ✓ The US President called for putting **1 million** electric vehicles on the road by 2015

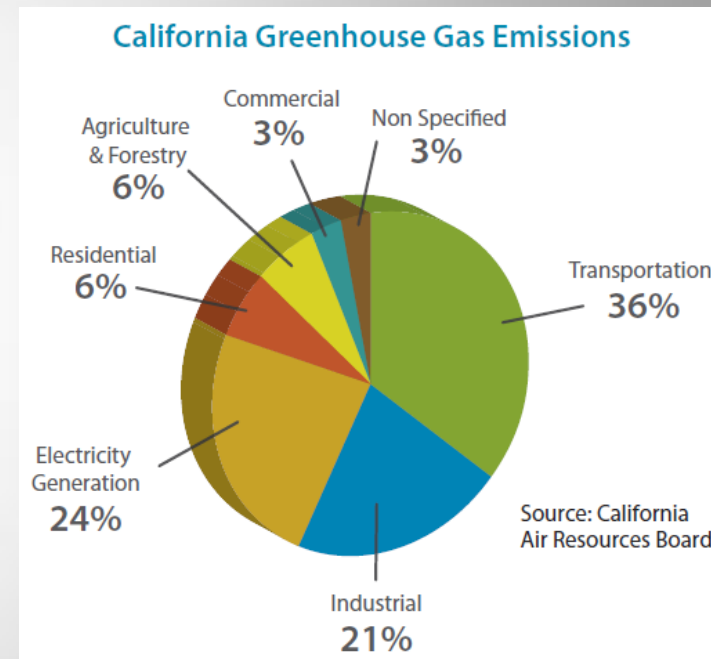
Source: <http://gov.ca.gov/news.php?id=17472>

& [www1.eere.energy.gov/vehiclesandfuels/pdfs/1\\_million\\_electric\\_vehicles\\_rpt.pdf](http://www1.eere.energy.gov/vehiclesandfuels/pdfs/1_million_electric_vehicles_rpt.pdf)

# Why Plan for the Deployment of PEVs in the San Joaquin Valley?

## Pollution Sources

- ✓ Region's unique geography, emissions from Northern & Southern Calif., local sources, create significant air quality challenges
- ✓ Transportation accounts for **~40% of Calif. greenhouse gas emissions**
- ✓ **~60% of local air pollution** (smog forming NO<sub>x</sub>) **directly caused by on-road mobile sources** (gas cars and trucks )



# San Joaquin Valley Air Quality Issues

## Public Health Impact



- ✓ Children are 35% more likely to have asthma
  - Air pollution in SJV has equivalent cost
    - **\$1,600 per person per year**
    - **\$6 billion to the region's economy**
- ✓ Every year air pollution is responsible for (SJV and South Coast):
  - **3,812 premature deaths (30 years and older)**
  - **466,880 lost days of work**
  - **2,760 hospital admissions**
  - **2,800 emergency room visits**

*Sources: Calif. Air Resources Board & Anair, Don & Patricia Monahan, "Sick of Soot: Reducing the Health Impacts on Diesel Pollution in California." Union of Concerned Scientists (2004).*

# Solutions to Transportation Pollution

## Plug-in Electric Vehicles (PEVs)

- ✓ Increased deployment of PEVs key strategy to reduced emissions
- ✓ There are more than **285** PEVs in the San Joaquin Valley (April 2013, for updated PEV statistics, visit [www.energycenter.org/projectstatistics](http://www.energycenter.org/projectstatistics))

## Infrastructure Network Needed

- ✓ Planned and strategic infrastructure network critical to supporting regional PEV drivers
- ✓ Address barriers to deployment of charging stations in region
- ✓ There are more than **10** public PEV chargers in the San Joaquin Valley

*Source: Clean Vehicle Rebate Project*



**Where are the PEVs  
located in the San  
Joaquin Valley**

# Where are the PEVs located ?

**Fresno County: 73**

**Kern County: 63**

*\*Includes vehicles in the SJVAPCD region as well as the Eastern Kern Air Pollution Control District*

**Kings County: 3**

**Madera County: 14**

**Merced County: 9**

**San Joaquin County: 70**

**Stanislaus County: 31**

**Tulare County: 22**



# **Thank You!**

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**[www.energycenter.org/pluginready](http://www.energycenter.org/pluginready)**