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Making San Francisco EV-Ready

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San Francisco Department of the Environment

SPUR
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Making the Bay Area A Top EV Market

High Priority for Mayor Lee
and
Former
Mayor Newsom

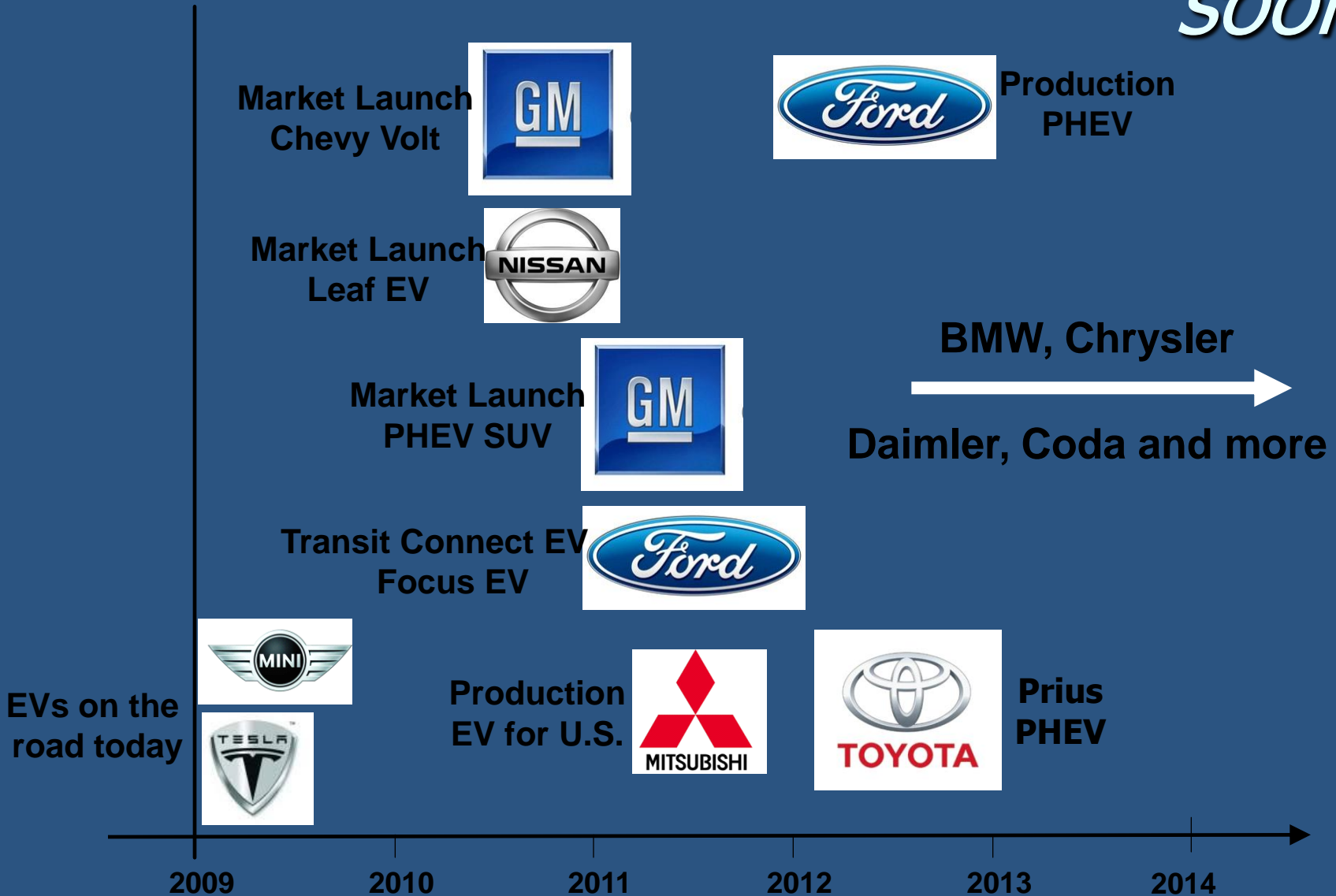




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Vehicles on Their Way...

soon!





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EV Infrastructure: What is it?

Level 1

- 110 Volt, 20 amp
- slow...trickle charge

Level 2

- 240 Volt, 40 amp
- Most common for home and public stations
- 4-6 hr
- Standardized for all EVs

DC Fast Charge (Level 3)

- High voltage/high amp
- 15-30 minute
- Limited locations
- No standard yet

...and Battery Switch Stations

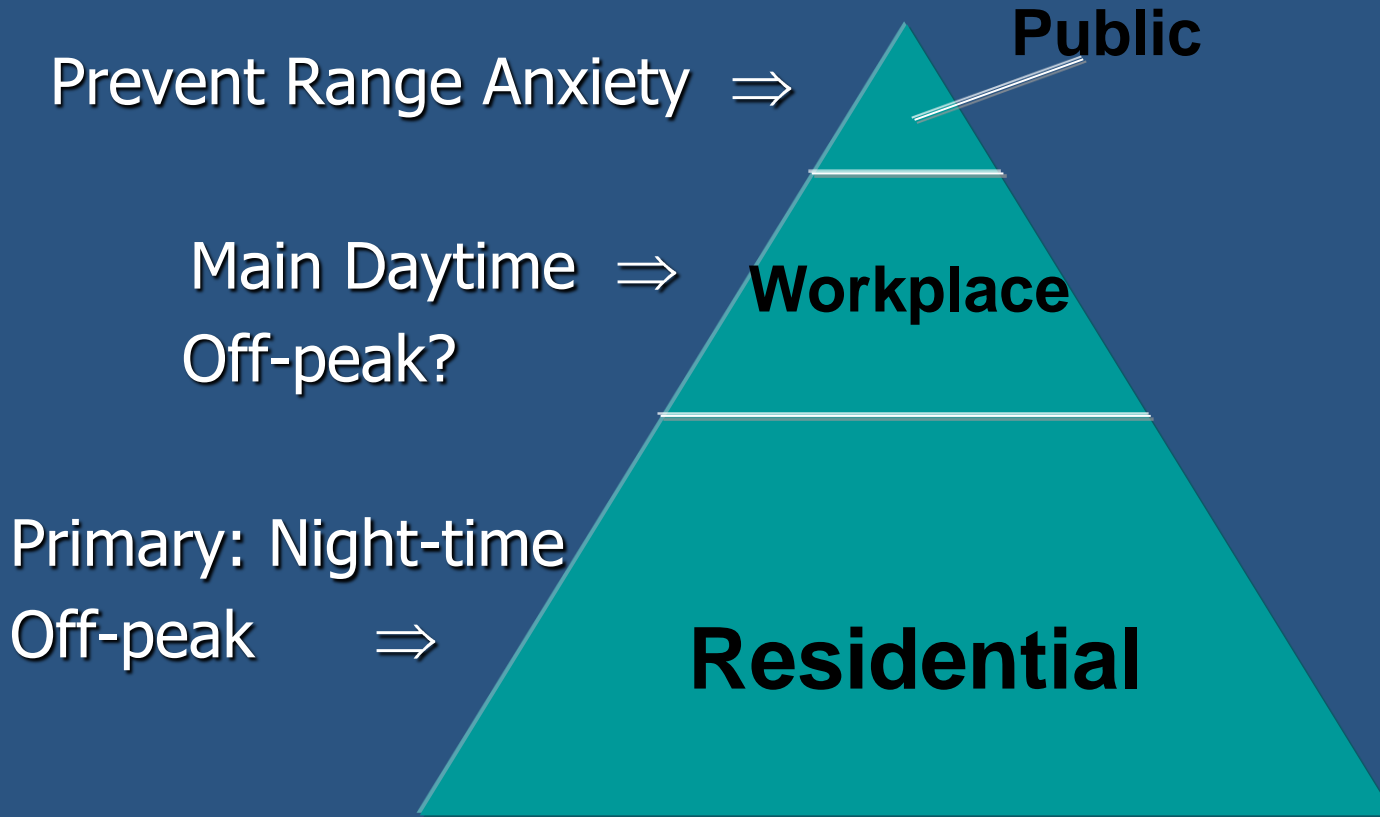


Product images courtesy
Coulomb Technologies



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EV Infrastructure: Where Does It Go?





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Residential Charging

- First priority – chargers in home garages
- Overnight, off-peak charging
- Incentives
 - PG&E time-of-use rates
 - Regional grants available (BAAQMD)
- Remove a barrier
 - “Streamline” the installation process



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Bay Area Region

Streamline EV charger installation

...part of EV Ready Community Guidelines

– *Ready, Set Charge* (ABAG, EVCA, BACC) and BAAQMD

Develop common guidelines for EVSE permits and inspection through ICC councils/TUCC...encourage same-day permits, or instant on-line (as in San Francisco)

Promote rapid local EVSE installation times by educating & coordinating OEMs, utilities, contractors, & permitting

Develop consumer information checklist for EV buyers...with links to auto OEMs, utilities, electricians, permitting authorities, local, customized implementation...e.g., SFE website



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City of San Francisco Public Infrastructure

- **Public Chargers**
Municipal garages, SFO and other city property
80 chargers at 20+ locations by end 2011
- **Public Chargers**
Private property
10-20 locations this year?
- **Fast Charge Stations**
Commercial locations
1-2 this year?



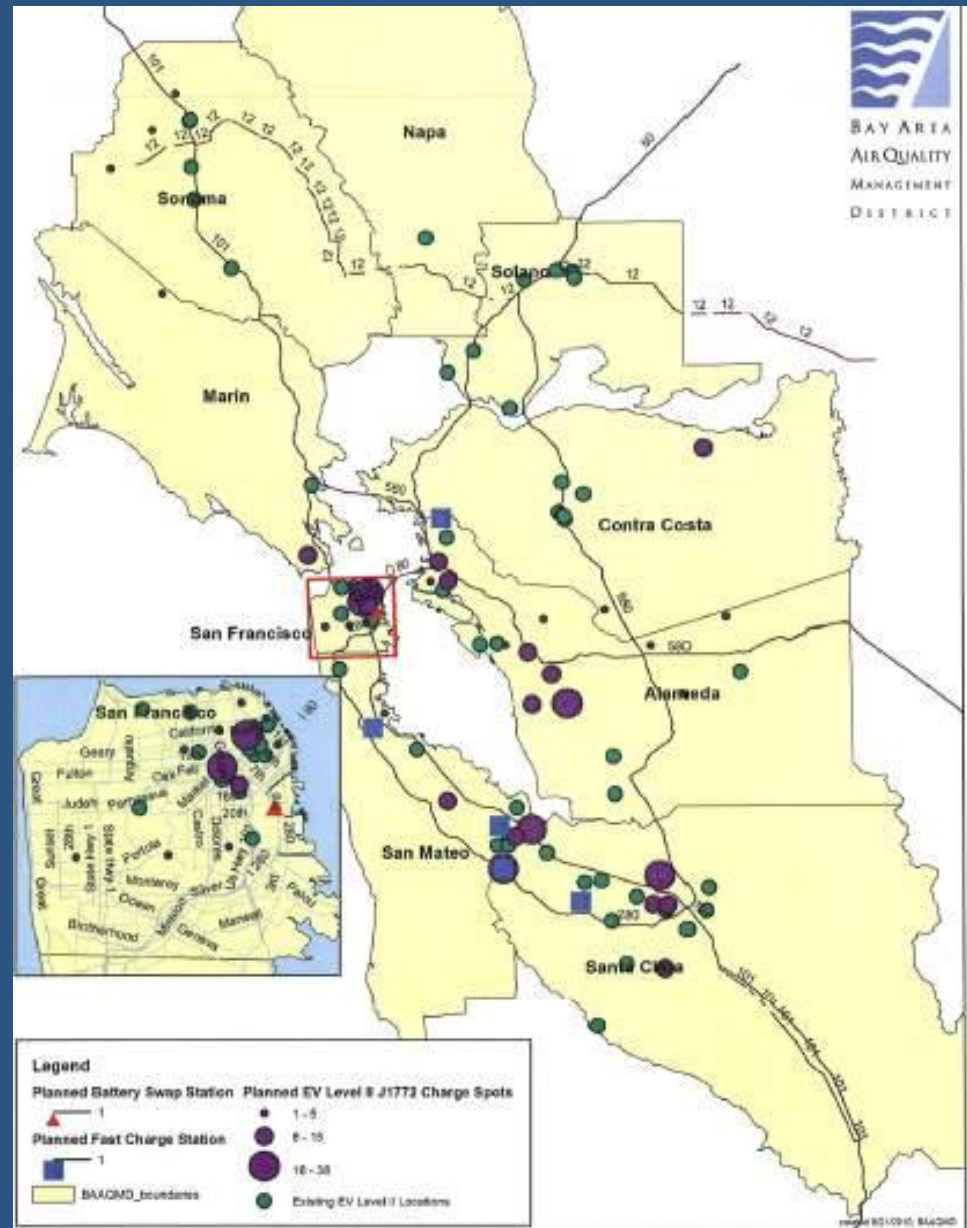


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Bay Area Region

- **Public Chargers**
400+ with current grant funding
- **Fast Charger Stations**
30-50 with current grant funding

(Map: For hypothetical illustration -- sample locations from regional grant applications)





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Planning Factors

- Public infrastructure...*how much demand, where?*
- Municipal vs Commercial public infrastructure...*what's the mix?*
- Determining the "power" mix...*Lev 1, Lev2, and Fast charge*
- Availability of resources



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Public Infrastructure

Some other questions to address as we move forward...

- **Fee for charging? (free in SF through 2013)**
- **Curbside charging...**
 - power supply and metering**
 - public right of way questions**
 - allocating EV-only spaces**
 - integration with parking meters, time limits**
- **Accessibility requirements**
- **Public Works guidelines**
- **New construction code requirements (public and private buildings)**



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Challenge of the Garageless!

2/3 of SF housing is multi-family buildings...81% SF housing is renter occupied (SPUR Urbanist, Feb 2011)

Ways to address:

- Outreach & tech assistance for owners and HOAs
- Nearby public chargers
- Fast charger
- Workplace charging
- EV car-sharing





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Commercial and Workplace Properties

City helping facilitate...

working with Business Associations and
public/private collaboratives

- SF & Bay Area Clean Cities Coalitions
- BC3 — *Electrify Your Business*
<http://www.bc3sfbay.org/ev-guide-for-businesses.html>
- Bay Area Council
- Bay Area Climate Collaborative



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Innovation... EV Car-share

Plug-in Hybrids and EVs

- Expand pool of EV drivers
 - Garageless drivers
 - City fleet use



Climate innovation grant
(MTC to City CarShare)



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Innovation... Neighborhood EV Taxi



- 25 San Francisco taxis for short trips
 - Underserved neighborhoods
- Climate innovation grant from MTC



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Innovation...

Battery-Switch Taxi Program

Demo/Pilot – first in U.S.
(Better Place)

- 4 Battery-Switch Stations
San Francisco and San Jose
- ~60 Battery-switch taxis

Climate innovation grant from MTC
and BAAQMD grant





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Thank You!

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