



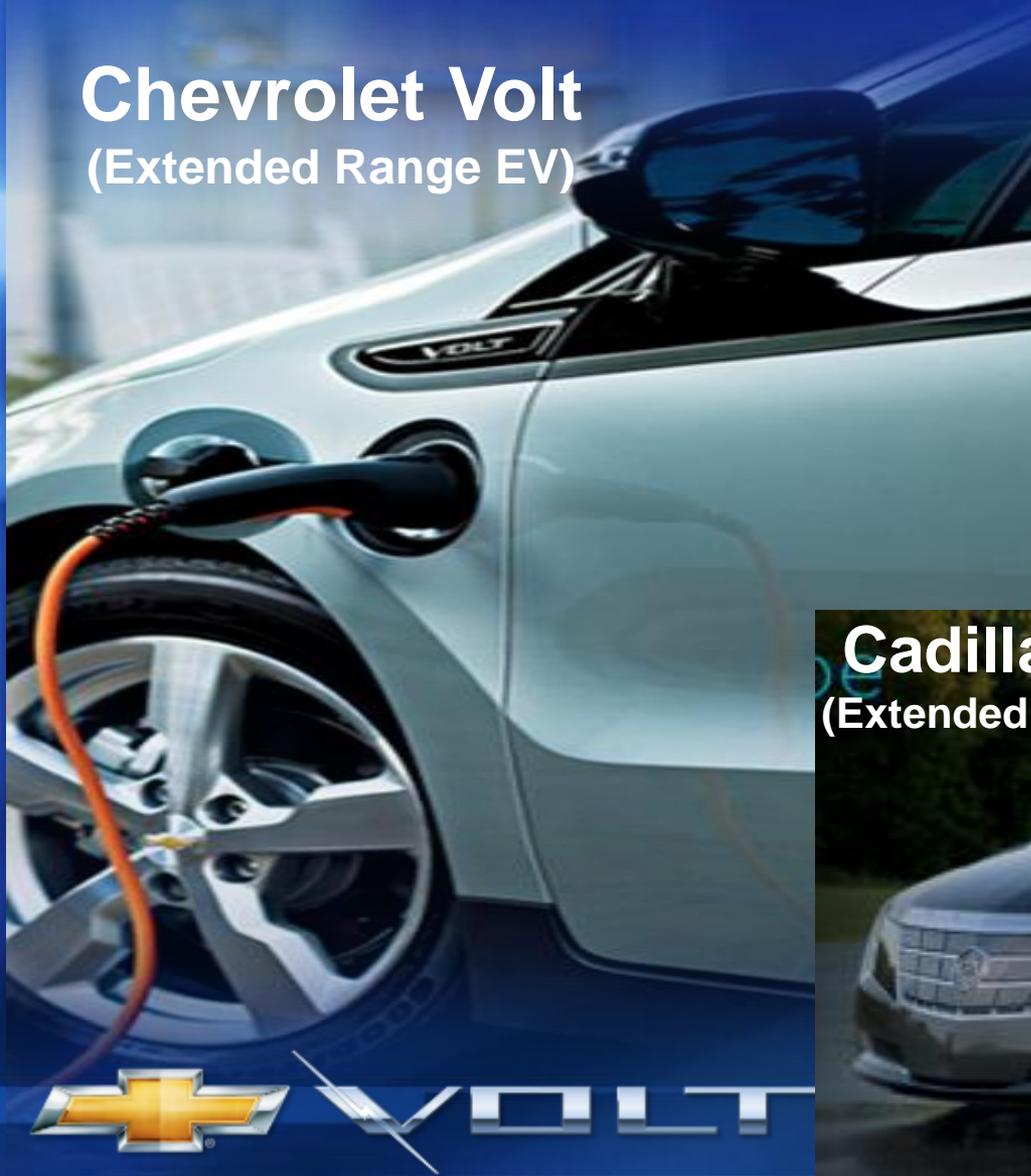
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Advanced Vehicle & Infrastructure Policy



GM's Plug-in EV Lineup



Chevrolet Volt
(Extended Range EV)



Chevrolet Spark EV
(BEV) California and Oregon



Cadillac ELR
(Extended Range EV)



Early adopters will influence the next generation of buyers

Early Adopters



Fast Followers

- Each successive wave of **consumers relies on the experiences and recommendations of previous buyers**
- The first Volt buyers are primarily early adopters (75%)

Volt

Nationwide Launch

Dec 2010
Volt launch

Early Adopters

Fast Followers

Early Majority

Influencers needed to convert early majority

Late Majority

Laggards

100% of Market

Area between curves represents number of customers (illustrative)

Things that we are doing well...

Styling



Performance



Features / Technology



How do we enable broader acceptance...

Range



Charging



Size



Value For The Money



While customers express interest in these types of vehicles, they don't want to change their routines or significantly alter driving habits to accommodate new technologies



Owners indicate that they are willing to do whatever it takes to assimilate their PHEV/EV into their lifestyle

Intenders, while open to the idea of a PHEV/EV purchase or lease, do not want to change their lifestyle to accommodate the new vehicle

Specifically they tell us that . . .

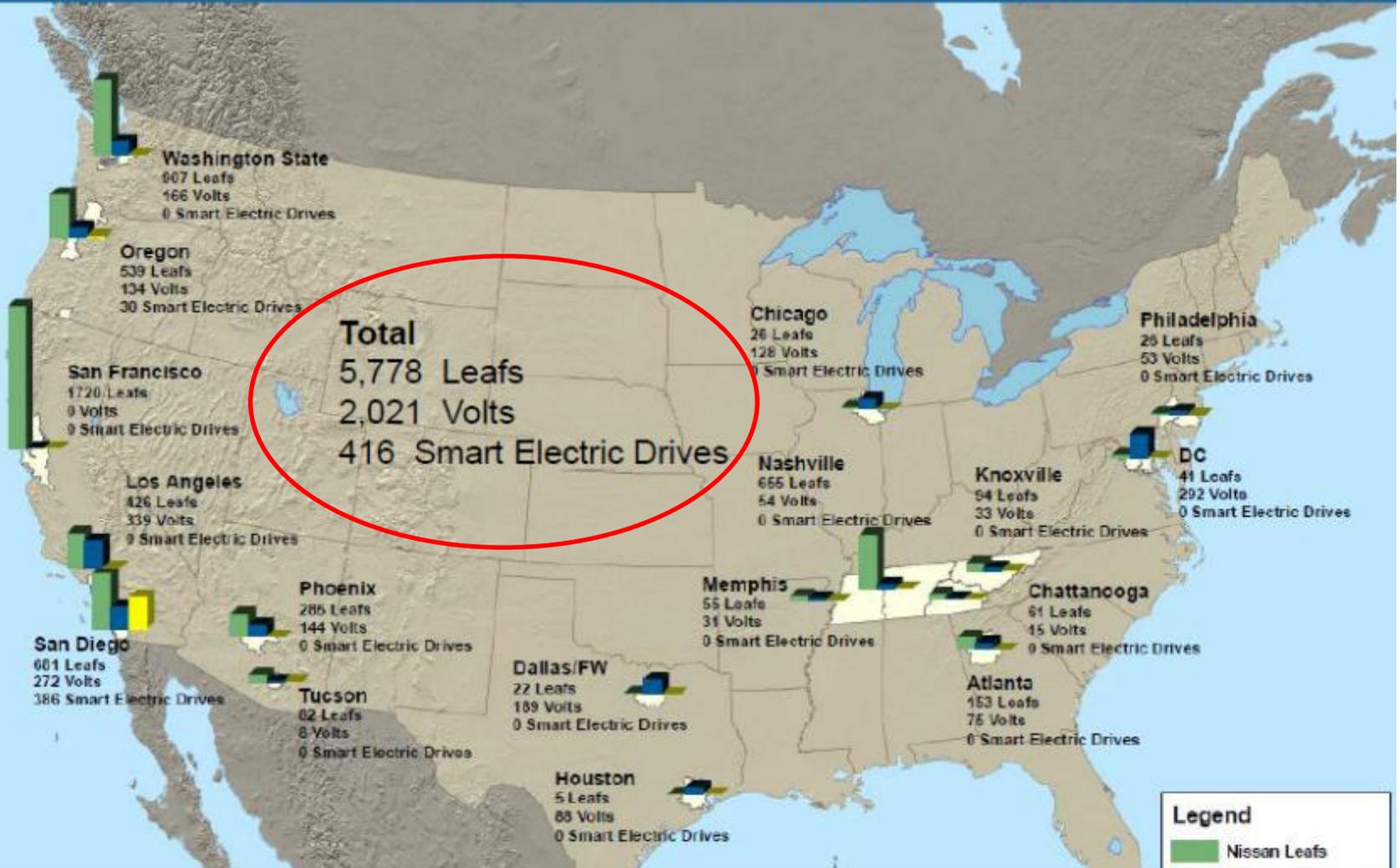
- They don't want to have to do significant planning for trips
- They don't want to have to go out of their way to charge

**Need to simplify.
Need for continuing education.**



Vehicle Enrollment in The EV Project

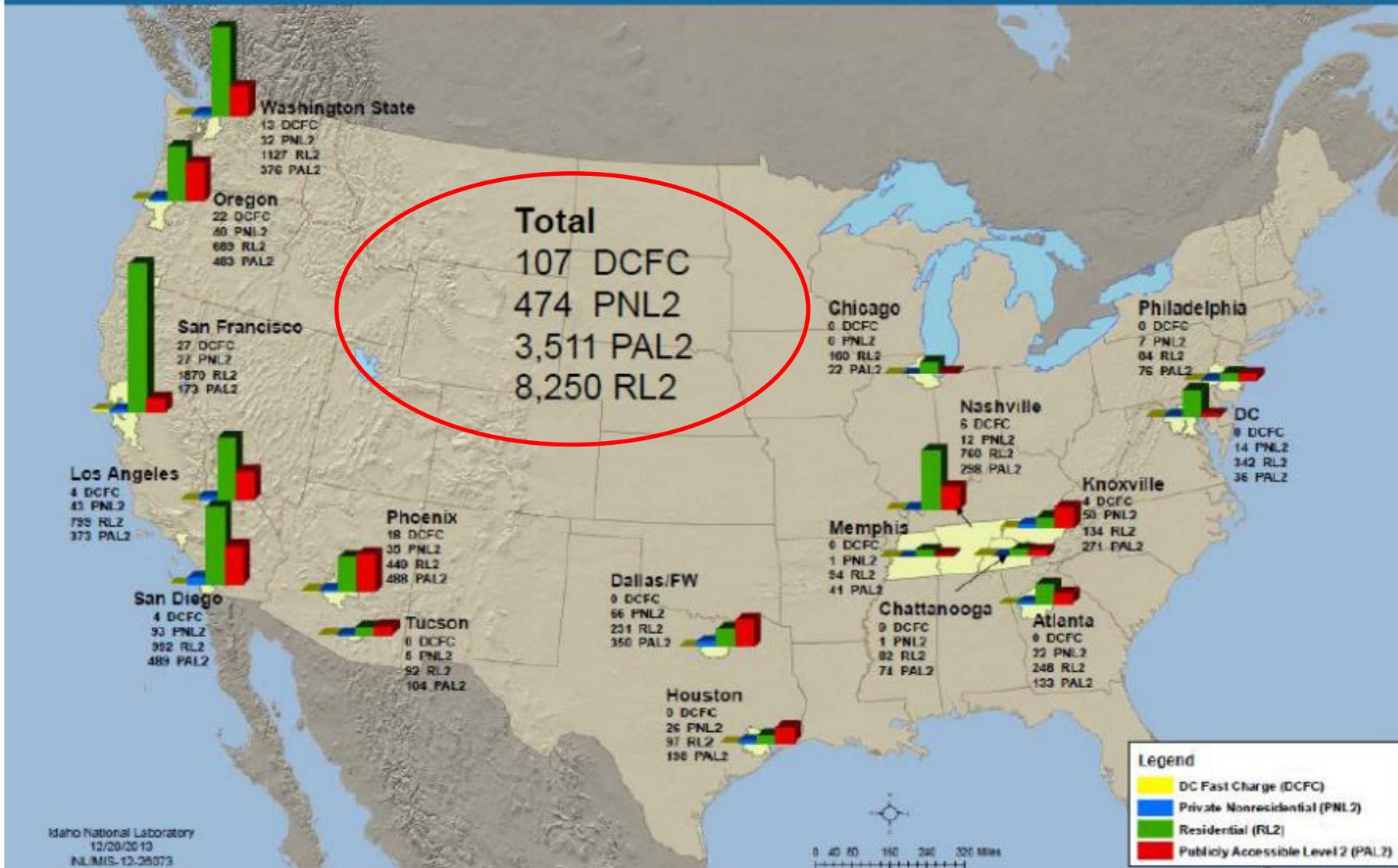
Nissan Leafs and Chevrolet Volts Reporting Data in The EV Project through September 2013



The DOE's *EV Project* provides a valuable source of electrical infrastructure data.

Infrastructure Deployment in The EV Project

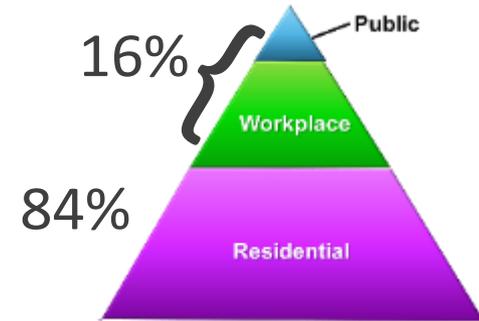
Blink Charging Units Reporting Data in The EV Project through September 2013



Home vs. Work vs. Public Charging

Study Period 1/1/2012 – 12/31/2013

- Overall EV drivers:
 - 84% of all charging events are at home
 - 16% not at home



- When workplace charging is available:

96 Volts

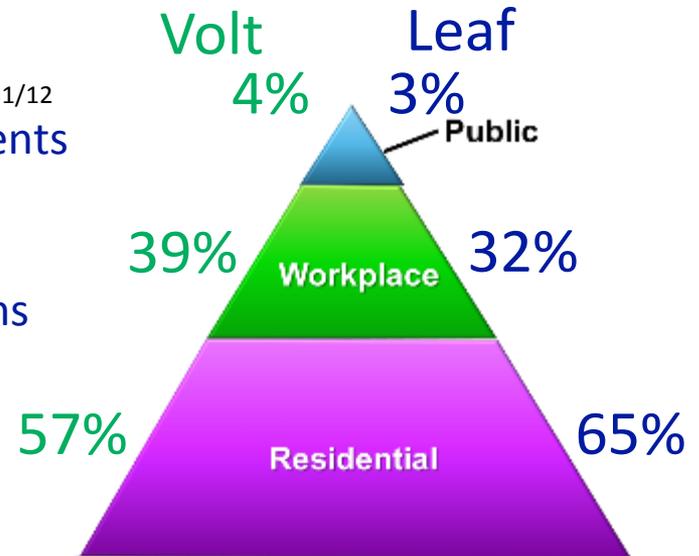
Access to workplace charging 1/1/13-12/31/13

- 57% of charging events are at home
- 39% at work
- 4% at other locations (e.g. public)

707 Leafs

Access to workplace charging 1/1/12-12/31/12

- 65% of charging events are at home
- 32% at work
- 3% at other locations (e.g. public)



Residential and workplace charging provide the vast majority of all charging.

Source: John Smart, INL, EV Project; Link to all reports = <http://avt.inel.gov/librarybydate.shtml>

<http://avt.inel.gov/pdf/EVProj/ChargingLocation-WorkplaceVoltsMar2014.pdf>

Workplace Charging

- 1. Provides daily charging for those without a convenient home charging solution**
- 2. Doubles the potential for daily electric miles driven**
- 3. Provides a visible showcase of PEVs available in the market to potential new car buyers (employees, execs, fleet managers)**

Actions Needed:

1. Need IRS to clearly state EV charging in the workplace is defined as “de minimus” and not a taxable benefit to employees
 - As are \$125/mo employee-provided transit passes and \$240/mo parking privileges
2. Need Architect of the Capitol to clearly state Government facilities can provide employee/visitor EV charging
 - Define a fee mechanism for employee charger use (credit card, monthly deduction, ...) and give project go-ahead
3. Promote the DOE’s Workplace Charging Challenge Initiative

Arguably the most important infrastructure strategy to accelerate adoption of PEVs.

Summary

Is perception really lagging reality?

- The real work of charging vehicle batteries is being done overnight at the home (much via 120V outlets) ...
- ... followed by daytime charging at work.
- Need to grow workplace and MUD (multi-unit dwelling) charging availability.
- Public charging adds “even more” electric drive capability, but is built on a solid base of ubiquitous charging availability ...





VOLT