

GENERAL

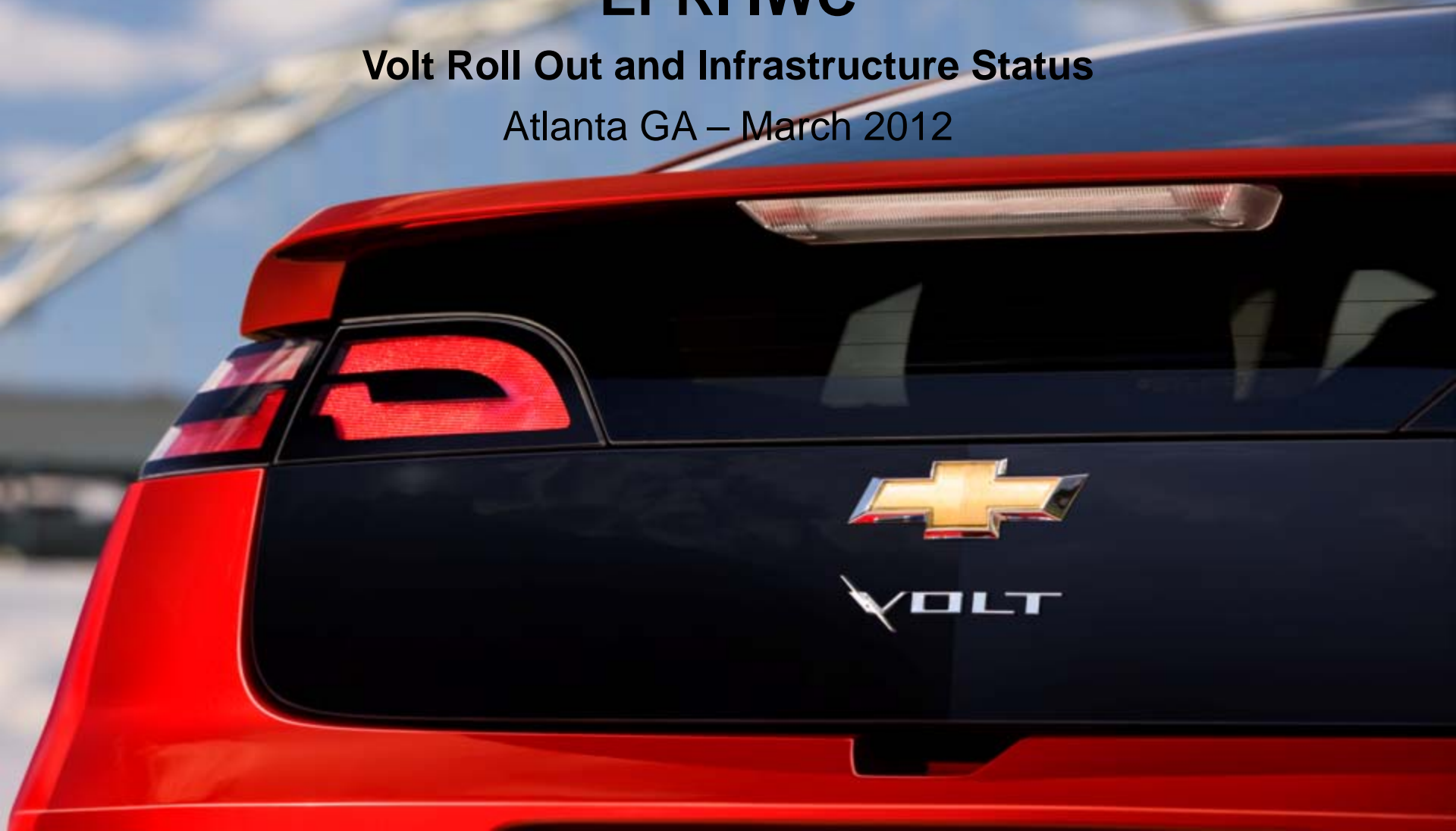


MOTORS

## EPRI IWC

### Volt Roll Out and Infrastructure Status

Atlanta GA – March 2012



# Chevrolet Volt: Electric Vehicle (with a Range-Extender)



Designed for **40** miles  
**BATTERY**  
Electric Drive  
*(typically 25-50 mile EV range)*



Designed for over **300** miles  
**EXTENDED RANGE**  
Driving on Gasoline

EPA label: EV @ 94mpge (35 miles) + Gas @ 37mpg comb (344 miles) = Overall 60mpg (379 miles)



Volt Now Available in All 50 States

- Volt retail sales 9,500
- 20 million miles on electric (30 million total Volt miles travelled)
- 2,600 dealers nationwide, trained to sell and provide service to Volt customers
- 2011 - focus on supply (ramp up technology, production, sales, service, infrastructure)
- 2012 - focus on demand (both retail consumers and fleets)
- Vehicle incentive programs growing - West Virginia just passed \$7,500 (joining 7 other states, the federal government, and 3 Canadian provinces)
- GE has ordered 12,000 Volts (200 thus far delivered) - leading the way in corporate commitment
- Need increased collaboration between plug-in ready communities, state and municipal leaders, and corporate stakeholders

**In 2012, focus on plug-in vehicle sales**



# New Ad Campaign: Volt Customer Testimonials

**Consumer Reports:**  
Highest ever recorded  
Customer Satisfaction Scores  
(Volt = 93%)



**Priya**  
(ChevroletVoltage.com)

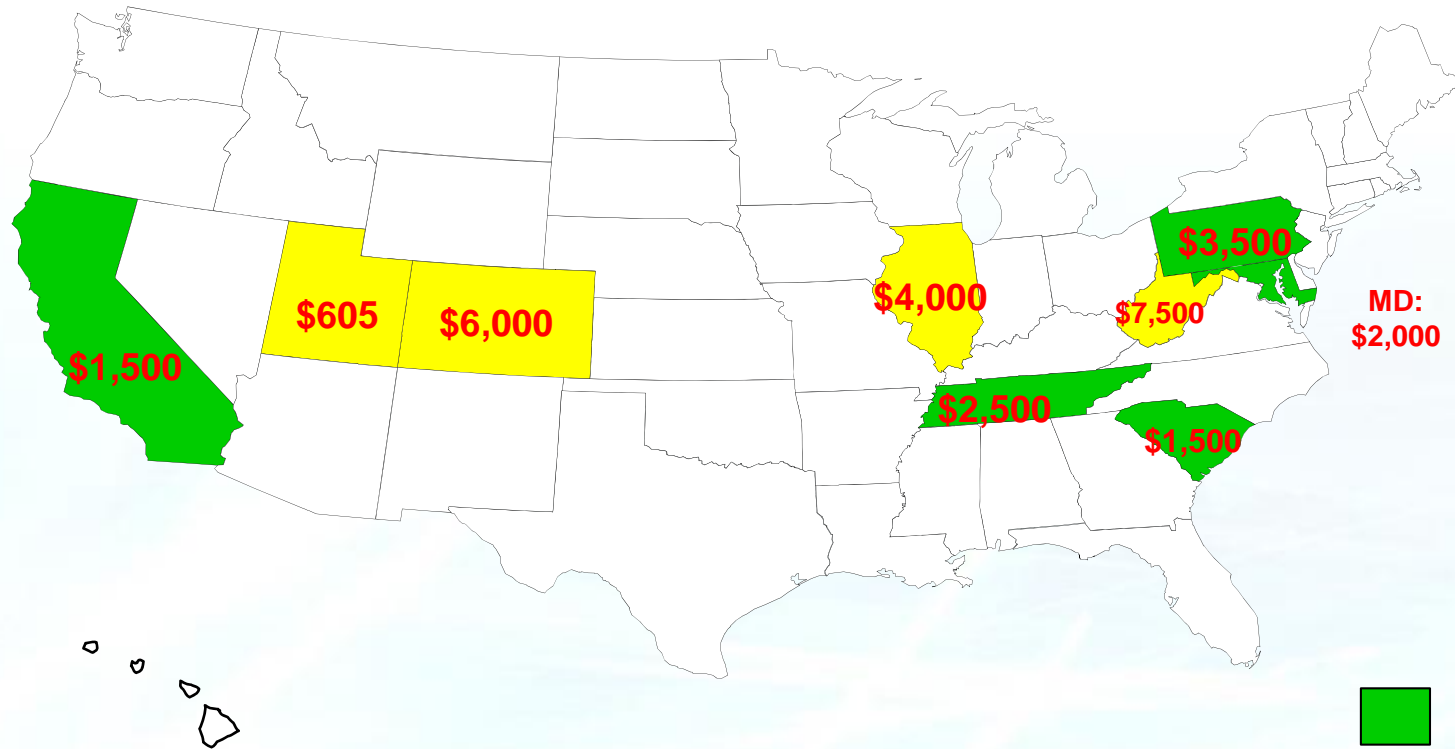


**Adam**  
(ChevroletVoltage.com)





**The Kassar's**  
(ChevroletVoltage.com)

# Vehicle Incentives: Volt Applicable



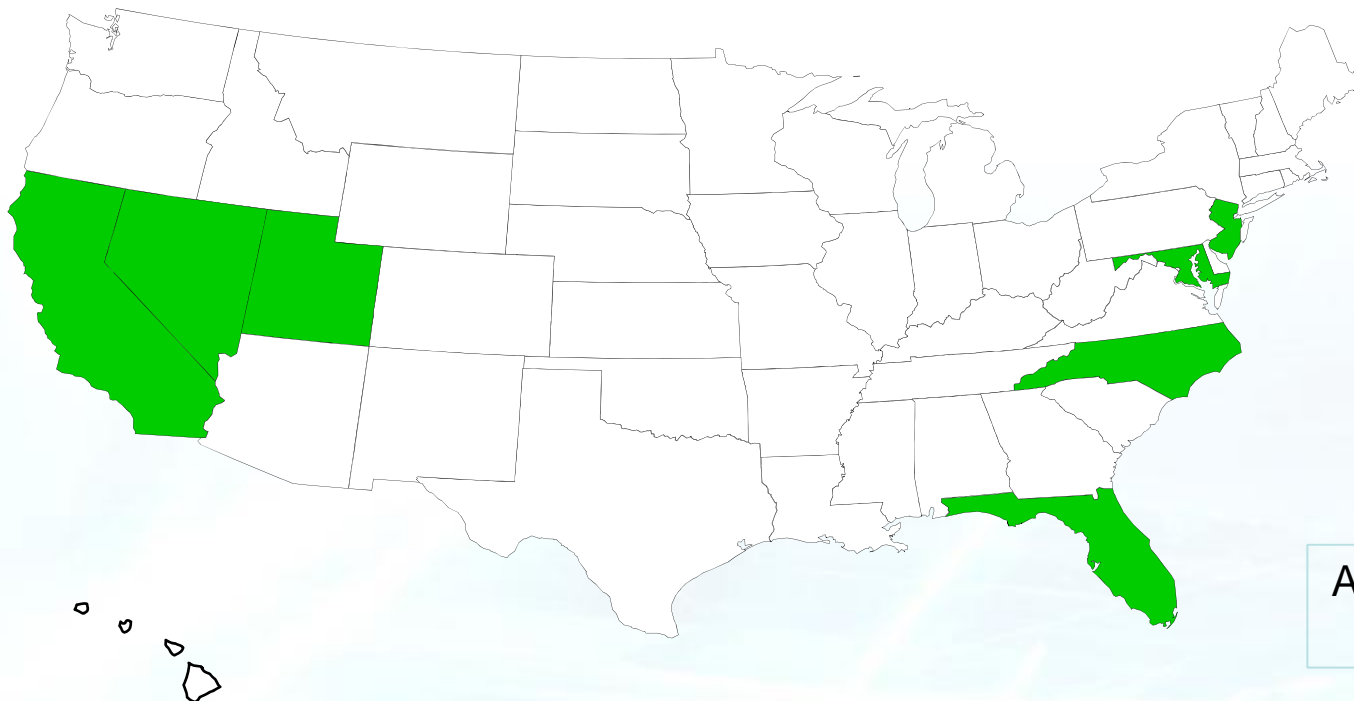
Federal Incentive  
\$7,500 income tax credit

 Rebate  
 Income Tax Credit  
(typ. purchase only)

**Find latest status of Incentives at the following websites:**

- DoE = <http://www.afdc.energy.gov/afdc/laws/>
- EDTA = <http://www.goelectricdrive.com/Incentives.aspx>
- Chevrolet = <http://www.chevroletvoltage.com/> (see Chevrolet Volt Incentives Function)

# HOV Lane Incentives:



All incentives shown represent “up-to”

## Other Incentives:

### State Incentives

- HA – \$500 home charging installation
- ID, MO, NC – Vehicle emissions testing waiver
- MD - \$400 home charging unit

### Utility Incentives (home charging)

- LaDWP - \$2,000
- DTE (Detroit) - \$2,500
- Consumers Energy (Michigan) - \$2,500
- Progress Energy (NC,SC) - \$1,500
- Duke Energy (NC,SC) - \$1,000
- LIPA (Long Island) - \$500 vehicle rebate
- CPS (San Antonio) - \$1,000

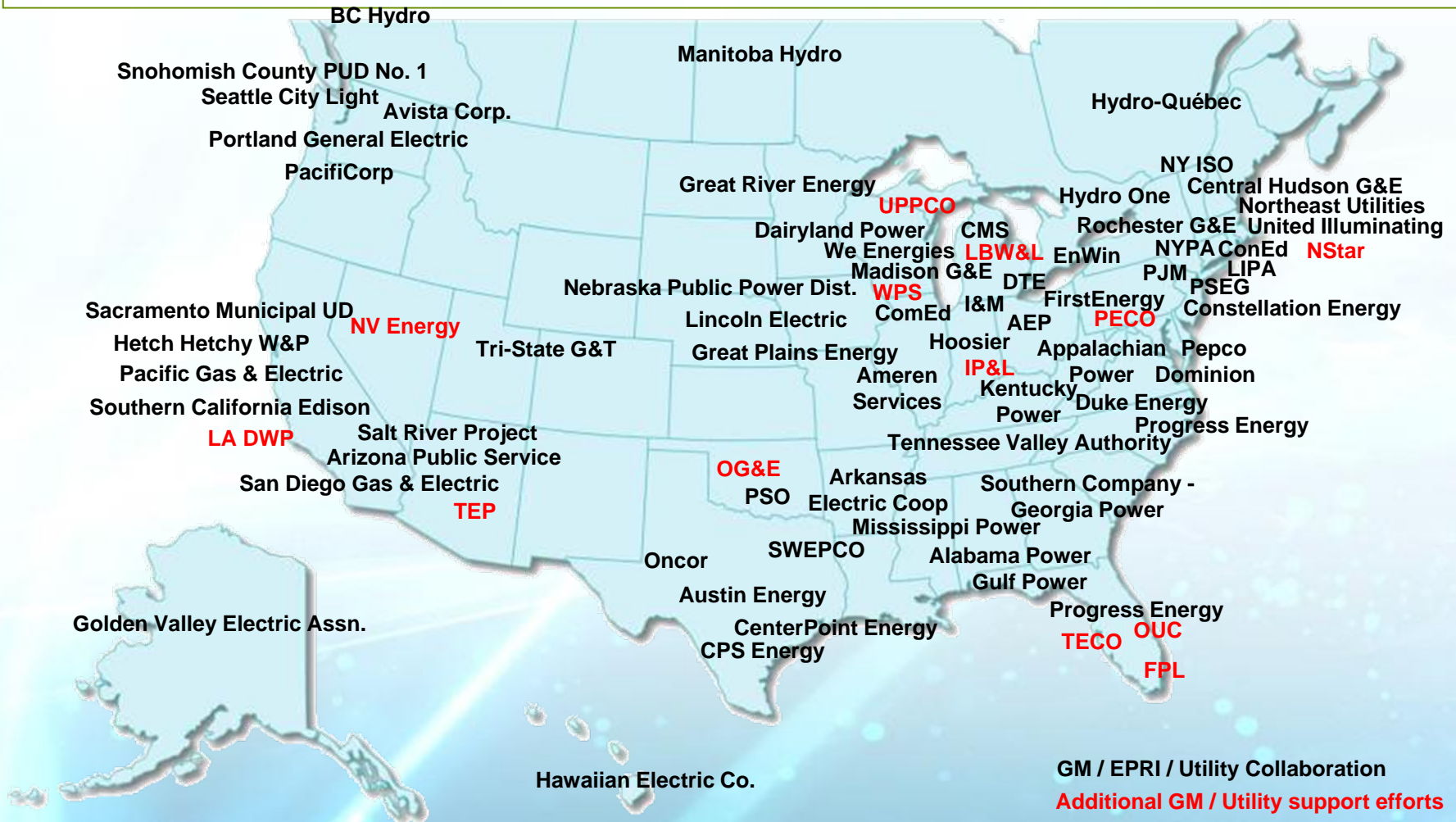


# CHARGING AND INFRASTRUCTURE



# GM / EPRI / Utility Collaboration:

- Largest existing auto-utility collaborative effort -- formed in 2007
- Over 50 utility members and the Electric Power Research Institute (EPRI)
- Focus areas: Vehicle-to-Grid Technical Interfaces, Aligned Messaging, Aligned Policy Priorities, New Business Opportunities (EV-to-Grid)



GM / EPRI / Utility Collaboration  
Additional GM / Utility support efforts



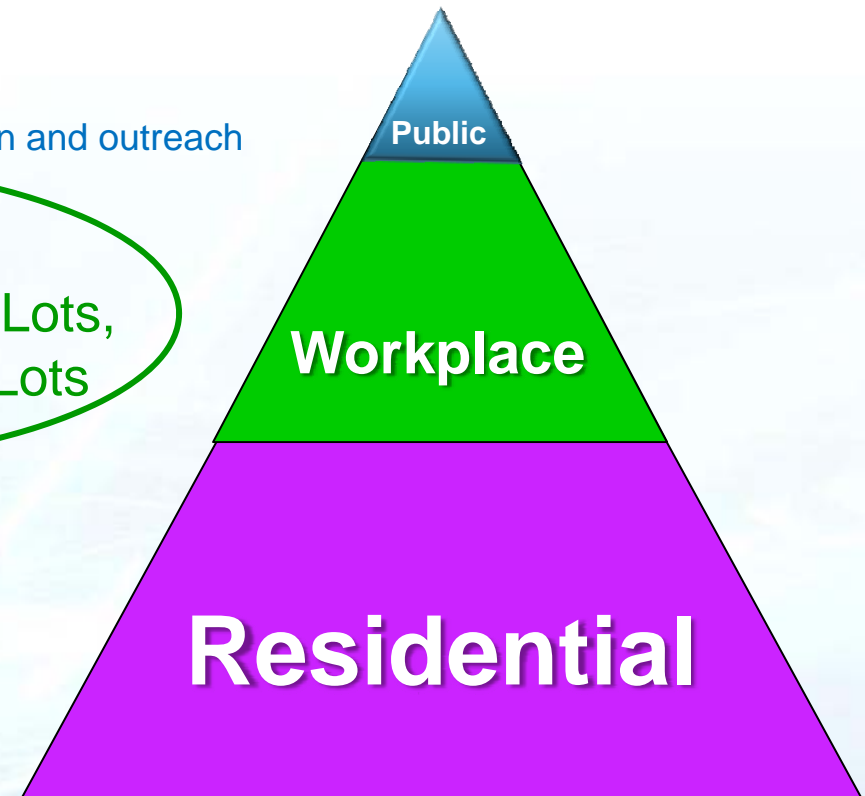
# Charging Infrastructure: Home ... Work ... Public

- Public charging
  - High Visibility
  - Destination
  - Public education and outreach

- Workplace
  - Corporate Parking Lots, Municipal Parking Lots

- Residential
  - Satisfying consumer-driven home installation process
  - Permits, electricians, inspections, meters, rates

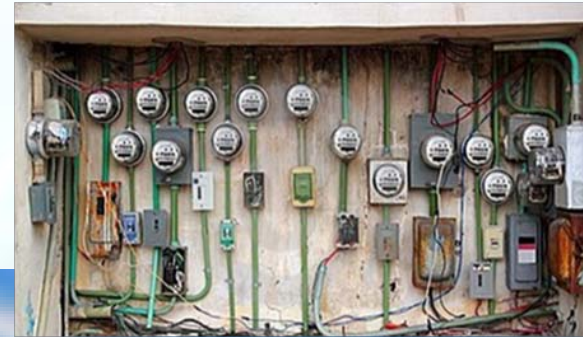
*Multi Family Dwelling Units*



# DC Charging Opportunities

DC charging may provide better access to electricity for customers living in MDU's.

- Corner “fast” Stations to Expand Customer Base
  1. Congested residential areas with curbside parking (e.g. brownstones)
  2. Apartments, condos (e.g. Miami, Manhattan)
- Improve charge spot “throughput” at destinations (INL)
- Still don't see DC enabling long-distance BEV driving



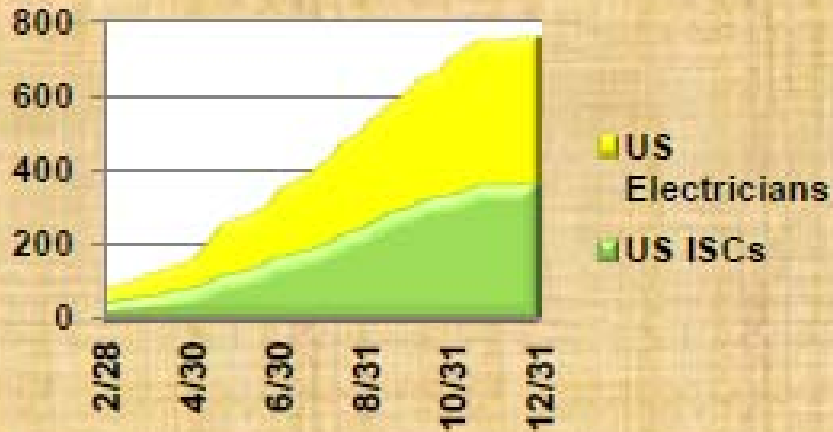
# Volt Infrastructure Learnings:

- **Roughly 50% of Volt customers charge at 120V (\$0)**
- **240V grant programs likely driving some 240V demand**
- **240V installation costs range from \$500 to \$6,000**
  - Average installation cost is ~\$1500 (plus hardware)
- **2<sup>nd</sup> Meters (to access preferred time-of-use rates) are installed in 20% of home EVSE installs**
  - Average 2<sup>nd</sup> meter installation adds \$900 to the cost (CA, MI,...)
- **85% of 240V installs are in Single Family Homes**
  - Multi-family residences more complex
- **Little evidence of local grid issues with 3.3kW**
  - Some concern, but no data, for >3.3kW charging
- **INL data**
  - Average distance traveled per day = 30.8 miles
  - Home @ 240V = 10 hrs connected; 2 hrs drawing power
  - Public @ 240V = 7 hrs parked; 2 hrs drawing power

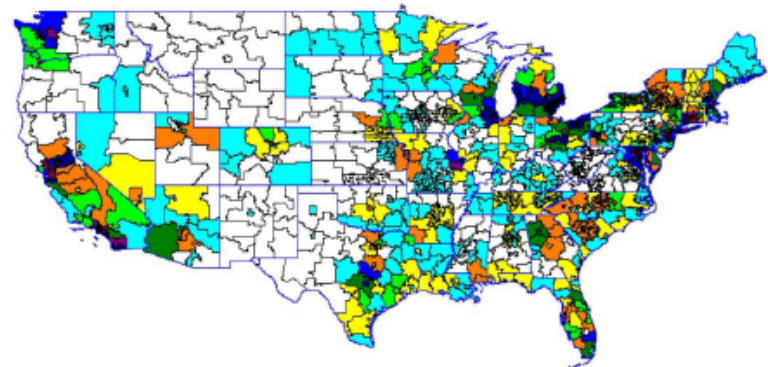
**Opportunities for both more use of 120V charging  
and for DC fast charging**

# 240V Home Charging: SPX's Growing Electrician Network

## US Certified ISCs & Electricians

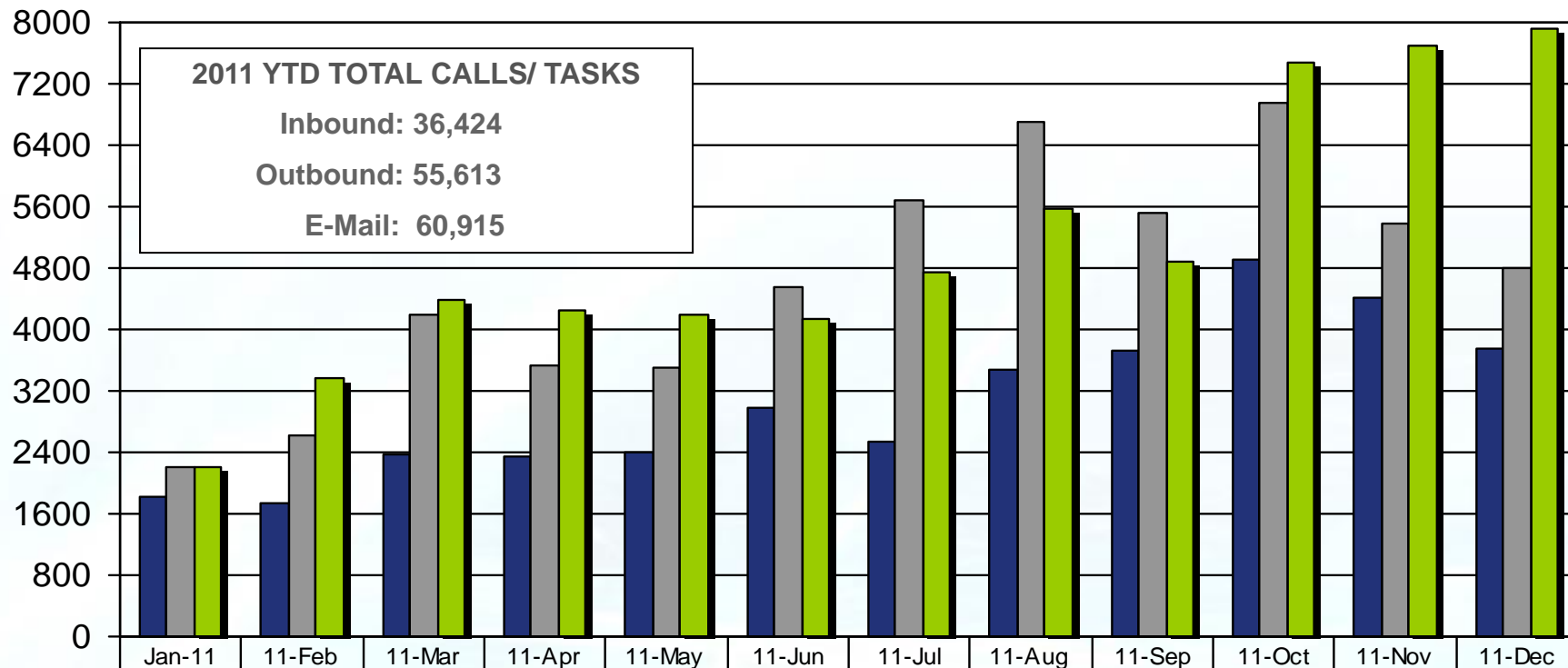


Certified ISC Service Area Zip Code Coverage (Updated 12/30/2011)



The national rollout of the Volt was accompanied by an expansion of SPX's electrical contractor network, from roughly 100 electricians to almost 800 currently.

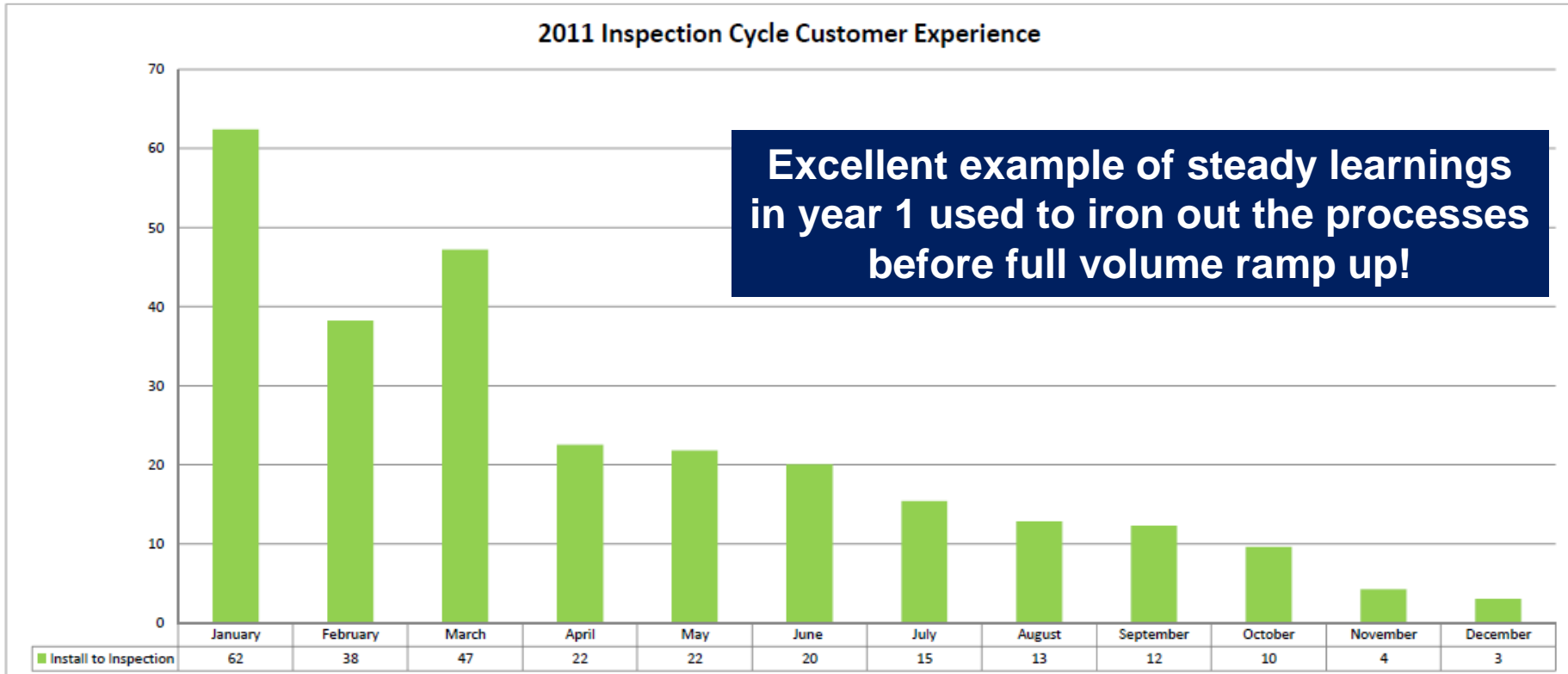
# 240V Home Charging: SPX's Call Center Activity



■ Inbound Calls	1820	1751	2364	2340	2403	2967	2528	3470	3717	4910	4401	3753
■ Outbound Calls	2204	2625	4190	3530	3496	4553	5689	6716	5504	6946	5370	4790
■ E-mail Work	2215	3371	4399	4260	4181	4146	4757	5578	4891	7489	7710	7918

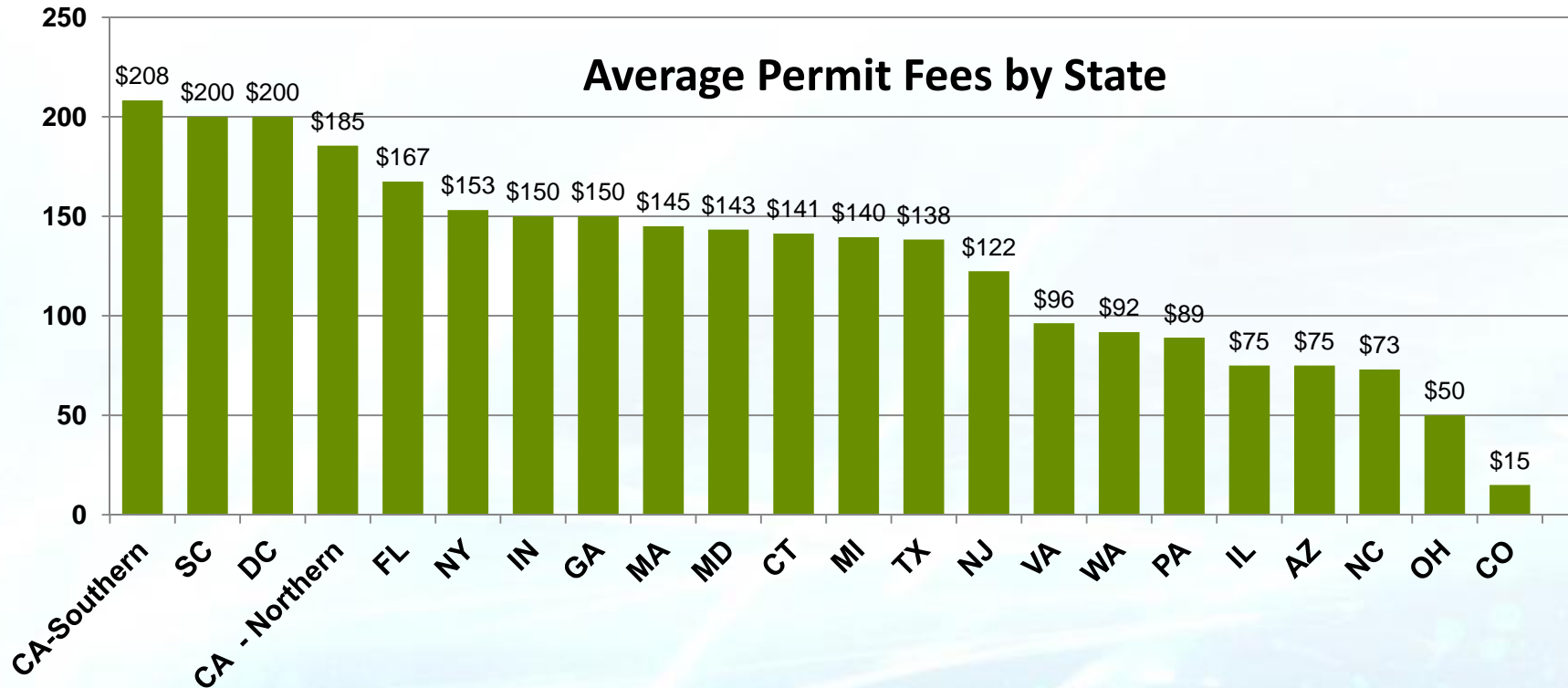
**SPX Call Center activity (phone calls and emails) increased significantly in 2011: >10,000 consumer-related contacts per month**

# 240V Home Charging: SPX's Improved Inspection Cycle Time



**Significant improvement in 2011 to better manage the final inspection time for 240V EVSE installations -- from an average of 62 days to 3 days !**

# 240V Home Charging: Permitting fees by State



Permitting fees range from \$14 in Portland to \$624 in Malibu;  
nationally the average permit fee is \$174

# PEV Rollout: Nat'l Education/Outreach, Sales/Service, First Responders

## Education and Outreach



## Dealer & Service Training



## First Responder Training



### Electrician Outreach/EVITP

- 150+ instructors
- 750+ certified electricians

### Sales Training

250 sessions & 2,600 dealers & 15,000 attendees

### National Safety Training Program with NFPA

- 10,000+ first responders have completed EV safety training

### Public Outreach/EDTA GoElectricDrive.com

- Industry-led education website
- 4,000 hits/week

### Service Training

3,200 technicians & 3,100 parts consultants & 3,500 service consultants

- **GM FirstResponder Website**  
<https://www.gmstc.com>

### Regional Outreach/DOE's Clean Cities Program

### [www.chevrolet.com](http://www.chevrolet.com)

- Volt technology-to-SPX service
- Customer experience

- **GM and NFPA partnership for training/education**  
[www.evsaftytraining.org](http://www.evsaftytraining.org)



# DOE Grant Programs: Volt Home Charging



Bottom Line:

***Do everything possible to accelerate plug-in vehicles in the market?***

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VOLT