
# Coulomb Technologies Program Update
# DOE Annual Merit Review Meeting
# May 12, 2011

Coulomb Technologies

This presentation does not contain any proprietary, confidential, or otherwise restricted information

# ChargePoint America Overview

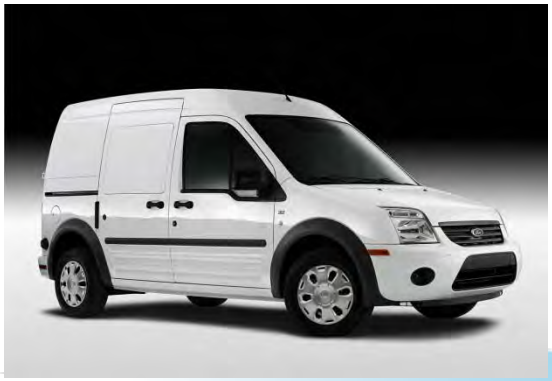
- Department of Energy Award DE-EE0003391
  - $ 37M Project ($15M DoE)
- 10 Metro Areas
- 3 OEM Partners
  - GM, Ford, Smart
- Approximately 4,600 stations
  - Public and Private Level 2: SAE-J1772
- Two Phases
  - Deployment phase ends 12/31/2011
  - Data analysis phase ends 12/31/2013

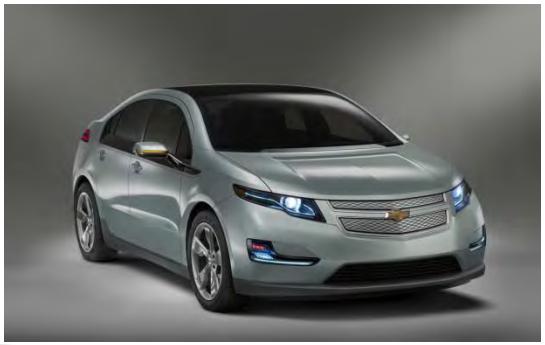
# Program Scope

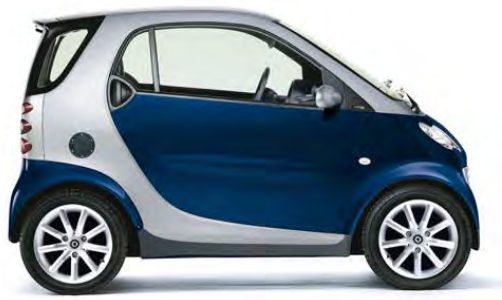
- Demonstrate the viability, economic and environmental benefits of an EV charging infrastructure
- Roll out an infrastructure for EV drivers to facilitate a rapid increase in the use of Electric Vehicles
- Coordinate Stakeholders and OEM EV deployments to maximize charging station infrastructure usage
- Provide EV charging stations for public, commercial and residential locations to encourage consumers to buy Electric Vehicles
  - Residential stations via OEM partners
  - Public/Commercial stations via Coulomb and Partners
- Collect data from the project (analyzed by Idaho National Lab) to help in formulate national EV policies and best practices

# OEM Partners

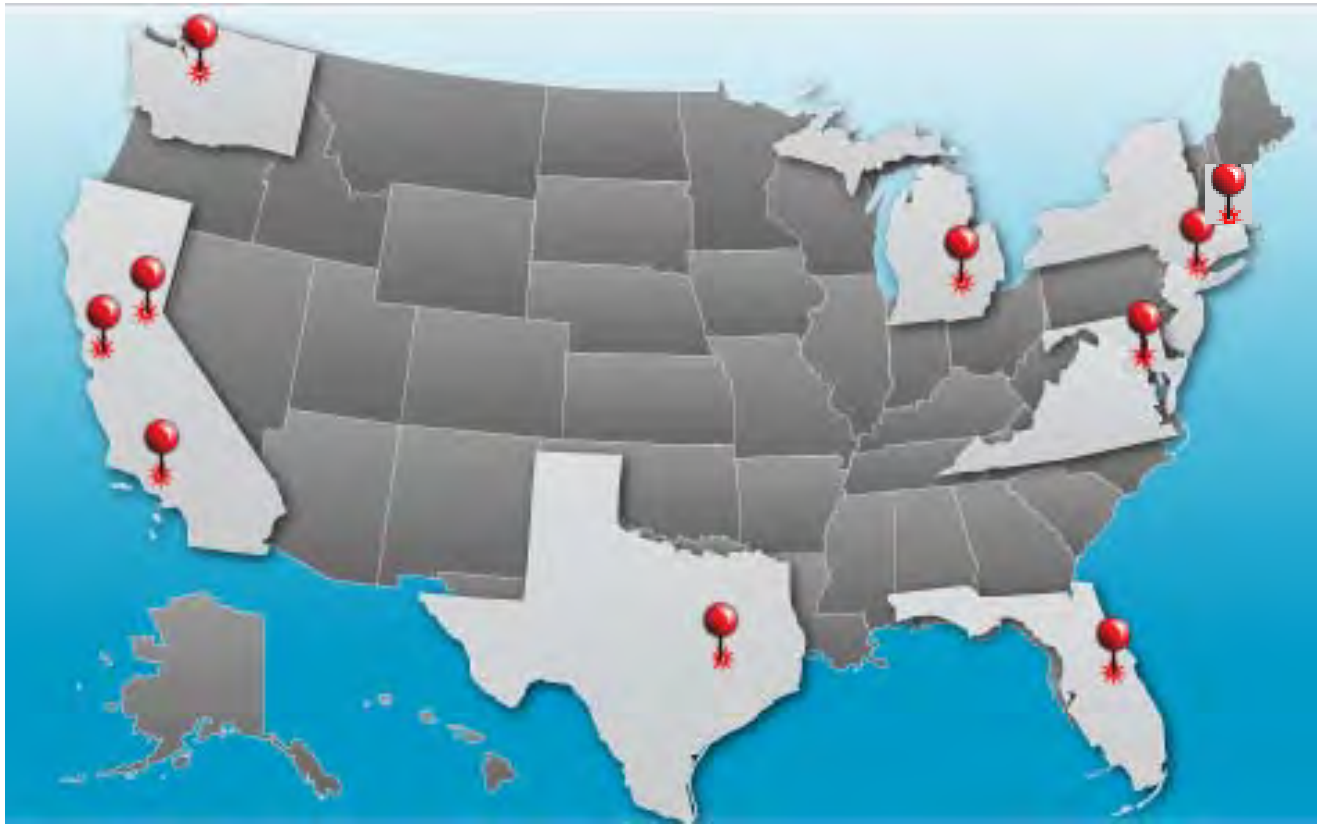
- Charger deployment will match OEM vehicle flow
  - GM Volt
  - FORD Transit Connect and FOCUS BEV
  - smartEV
- Home installations will be coordinated through OEMs
- GM/Volt installed through SPX Services







# ChargePoint America



Regions
New York Metro
Washington DC/Baltimore
Orlando/Tampa
S. Michigan
Boston
Central Texas
LA Metro
Sacramento
SF Bay Area
Redmond, WA Area

Coulomb Technologies



Coulomb Technologies, Inc.

# Program Update

- Deployment underway since June 2010
  - Strong interest
  - Fully deployed by Q4 2011
- Web Site application process
  - www.chargepointamerica.com
- Local media events in each region
- Multiple matching sources


Coulomb Technologies

# Early Observations

- Significant Regional Differences
  - EVSE knowledge base differs based on region and available resources. The overall awareness of EVSE issues, local utility offerings and sharing of information is low.
  - Lack of residential parking in some dense metro area's highlights the need for public shared charging and cost allocation
  - Equipment configuration requests differ by region
- Multiple Business Models
  - Free parking and free charging incentives to be offered in Los Angeles
  - Special public charging tariff in Austin ($25 for 6 months)
  - Car Charging (private business) provides free installations to host in return for future revenue share

# Early Observations

- A majority of hosts intend to charge for station usage
  - Utilities, Municipalities, Businesses, etc.
- Implementation is time consuming
  - Local regulations and ADA interpretations
  - Poor site planning
  - Installation coordination and training
- Install costs still high
  - Need more trained contractors to increase competition
  - Davis Bacon and Related Acts

# An Open Network Enables Innovation and Value


Driver Billing

Management/ Control

Vehicle Telematics


Mobile Devices

Utility Office, AMI

Open API

***The EVSE Network***

Open EVSE Interface

Open Driver Interface

Coulomb Technologies

# Policy Needs for a Successful Industry

- **Enable workable revenue model for shared stations**
  - Apartments, condos, public, retail, workplace
  - Drivers need to pay station owners for electricity, maintenance, capital, and real estate
- **Enable incentive rates and integrated metering**
  - Incentive pricing requires some type of sub-metering
  - Sub-metering in the charging station at low cost
  - Incentive pricing encourages off-peak energy
- **Smart Grid Integration**
  - Charging stations with Demand Response, Time-of-Use Pricing, and AMI compatible with the modern electric grid
- **Help with Local Planning**
  - Outreach and training for better planning of public charging locations
  - Streamline installation permitting and inspections

# Program Status

- EVSE Unit shipments happening daily
- Order process proceeding
- Installing Charging Stations
  - Working with local partners and local installers
- CEC Grant signed December 2010 ($3M for installations in California)
- Shipped units is approaching 1,000
- Regionally installed units is approaching 500