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

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
  o Residential stations via OEM partners
  o 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
  o GM Volt
  o FORD Transit Connect and FOCUS BEV
  o 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
Program Update

- Deployment underway since June 2010
  - Strong interest
  - Fully deployed by Q4 2011
- Web Site application process
  - [www.chargepointamerica.com](http://www.chargepointamerica.com)
- Local media events in each region
- Multiple matching sources
Early Observations

• Significant Regional Differences
  o 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.
  o Lack of residential parking in some dense metro area’s highlights the need for public shared charging and cost allocation
  o Equipment configuration requests differ by region

• Multiple Business Models
  o Free parking and free charging incentives to be offered in Los Angeles
  o Special public charging tariff in Austin ($25 for 6 months)
  o 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
  o Utilities, Municipalities, Businesses, etc.
• Implementation is time consuming
  o Local regulations and ADA interpretations
  o Poor site planning
  o Installation coordination and training
• Install costs still high
  o Need more trained contractors to increase competition
  o 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
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
  o 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