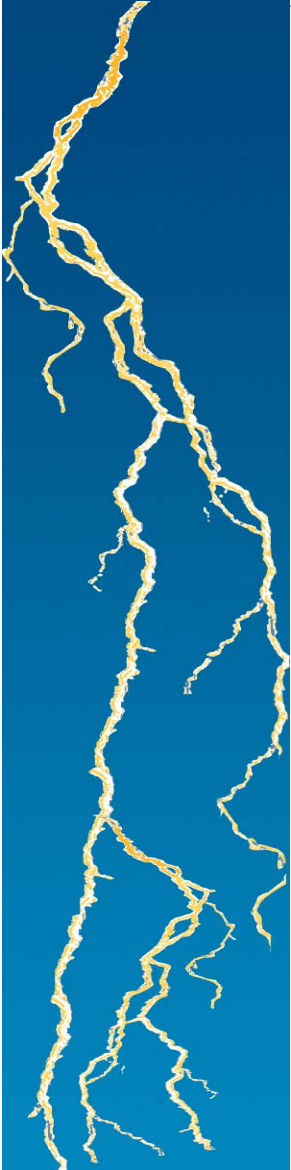


Minit-Charger



Electric Drive Vehicle Demonstration & Vehicle Infrastructure Evaluation

Presented at

E. V. Road Map

“Preparing Oregon for the Introduction of Electric Vehicles”

World Trade Center, Portland Oregon

Monday, November 9th 2009

Kevin Morrow

Electric Transportation Engineering Corporation

eTec Background

- Company Background
 - Established in 1996 (Phoenix Arizona)
 - Subsidiary of ECotality (OTCBB:ETLY)
- Markets
 - On-Road EVs/PHEVs
 - Charge Stations
 - Turn-key Infrastructure Service
 - Airline eGSE Charging Infrastructure
 - Electric Baggage Tractors
 - Electric Belt Loaders
 - Electric Push-Backs
 - Industrial Applications
 - Acquired Edison Minit-Charger in 2007
 - Low Speed Vehicles (LSV)
 - Neighborhood electric vehicles (NEV)
 - Utility electric vehicles
 - Consulting/Engineering Services
 - Battery Cycling and Development
 - Product Development Programs
 - U.S DOE AVTA Primary Contractor
 - H2 Infrastructure and HICE Vehicle Development & Conversions



Minit-Charger

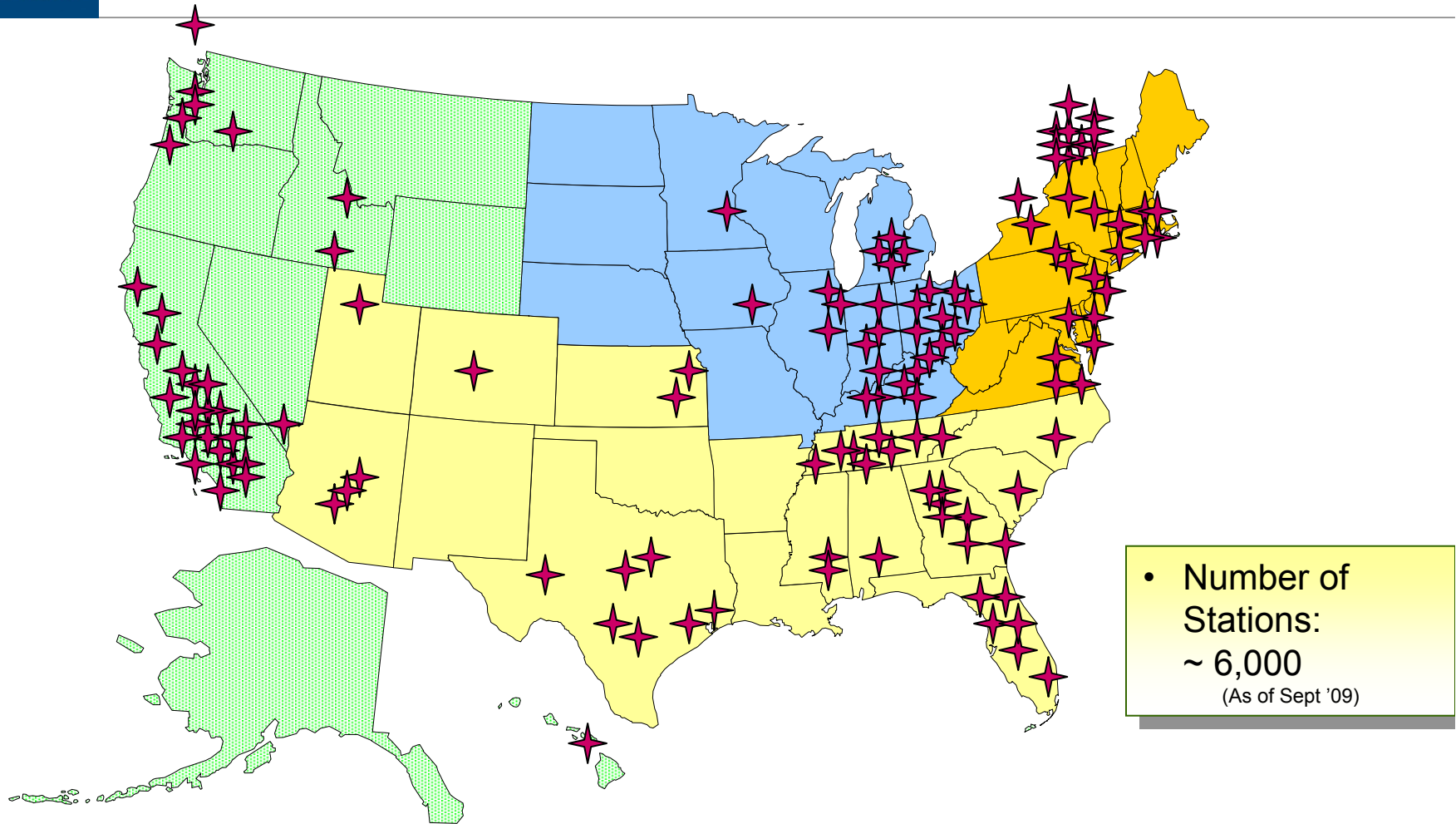
EV Charging Infrastructure Experience



- Public Charging
- Fleet Installations
- Residential installations



Current Customer Locations



Minit-Charger

ETEC Charger Products



Developing next generation Level 2 & Level 3
PHEV/EV Supply Equipment – J1772 compatible
Expected availability in Summer of 2010



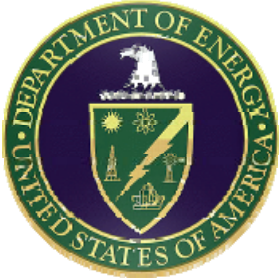
FOA-28 EV Infrastructure Deployment

- ETEC, USDOE, Nissan, & CEC will collaborate to build and study a mature charge infrastructure
- A total of \$99.8 million DOE and \$8 million CEC funding will be expended to develop mature charge infrastructures
 - 5 market areas
 - Seattle, Portland/Salem, San Diego, Phoenix/Tucson, Nashville/Knoxville/Chattanooga
 - 10,950 Level 2 EVSE
 - 260 Level 3 DC Fast Chargers
- Infrastructure studies and modeling
 - Data collection
 - Lessons learned
 - Grid interaction





Over 40 Project Partners



NISSAN



bp



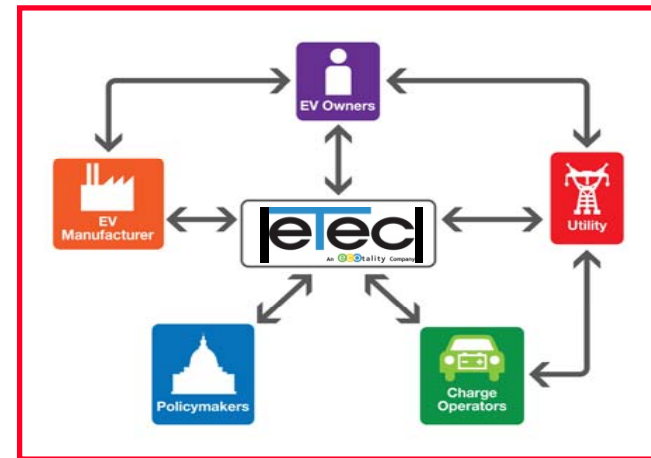
Soft Infrastructure Development

- First responder training
- Code inspection officials coordination
- Roadside assistance development
- Installation contractor training & certification
- Dealer training
- Public awareness



Infrastructure Planning

- Implement EV Micro-Climate process
- Bring together stakeholders
 - EV Manufacturers
 - Government
 - Industry
 - Utilities
 - Project Partners
- Develop infrastructure roadmap
 - Deployment area
 - Target locations
 - Communications planning



Oregon Residential Infrastructure Deployment

- 900 Nissan Leafs
 - Program sign up through Nissan
 - Mix of Private and Fleet Sales
 - Participant qualification required
 - e.g. Internet Connection, Within defined geographic boundaries, Minimum mileage requirements
 - Vehicle data collection
- 900 Level 2 “Home-Base” EVSE
 - Revenue grade demand & energy metering
 - Internet based user interface
 - Internet based data collection - wired interface



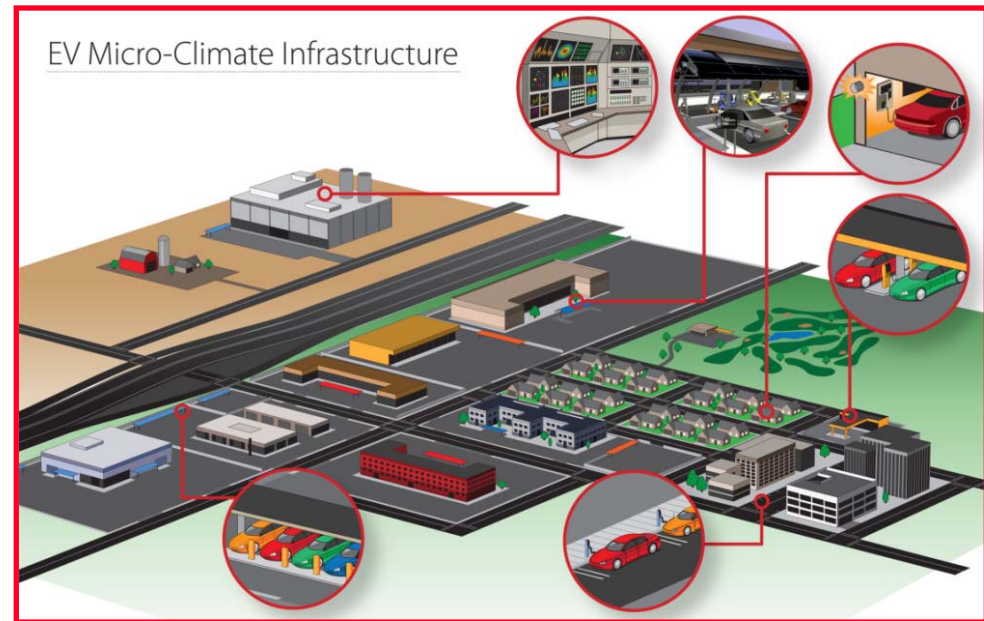
Commercial Infrastructure Deployment

- ~ 1,000 Level 2 Commercial EVSE in each market area
 - Revenue grade demand & energy metering
 - Revenue system pilot(s)
 - Internet based data collection - cellular interface
- Initial installations tied to retail locations
- Employer locations tied to vehicle sales



Public Infrastructure Deployment

- ~ 150 Level 2 Public EVSE in each market area
- Locations coordinated with local government
- Revenue system pilot(s)
- Stakeholders
 - City governments
 - Electric Utilities



Oregon Fast Charge Infrastructure

- 40+ Level 3 DC Fast Chargers
- Fast Charge Grid & Corridors between Portland, Salem, Corvallis and Eugene



Data Management & Analysis

- Vehicle and Charger utilization
- Smart Grid Integration
- Utility Impacts (e.g. Generation and Distribution)
- Demand reduction pilots
 - Effectiveness of rate incentives
 - Transparency of charge interruption
- Lessons Learned

GRIDPOINT



UCDAVIS



Schedule

- Contract with USDOE 10/1/09 ✓
- Soft Infrastructure Q1 2010
- Initial Infrastructure Q3 2010
- Vehicle Launch Q4 2010
- Final Infrastructure Q2 2011
- Evaluation Q4 2010
thru Q3 2012
- Reporting Quarterly
- Completion Q2 2013

Anticipated Results

- Infrastructures established and studied
 - Diverse geography, demographics and climates
 - Fully developed charge infrastructure
- Tested models developed
 - Charger deployment
 - Driver training/information
 - Revenue/access
- Sustainable business model for charger deployment

Additional Information

Follow the EV Project at:

www.theEVProject.com