



clean electric transportation technologies



***Preparing Arizona for the launch of electric
vehicles***

***Maricopa Association of Governments
Update***

June 10, 2009

In coordination with **NISSAN**

AZ's EV Micro-Climate Overview

- **ECOtality is working with Nissan to establish Arizona as one of the first 5 states to launch their new electric vehicles.**
- **We are proud to have Nissan, a truly visionary company in EVs, here to work with Arizona.**
- **Launch markets must be equipped with proper infrastructure to support EVs.**
- **Key stakeholders need to form working groups to prepare an area as an EV Micro-Climate.**
- **Establish a universal charge infrastructure that is vehicle & battery agnostic and Arizona as a launch market for the PHEVs and EVs of all manufacturers.**



Dear Team,

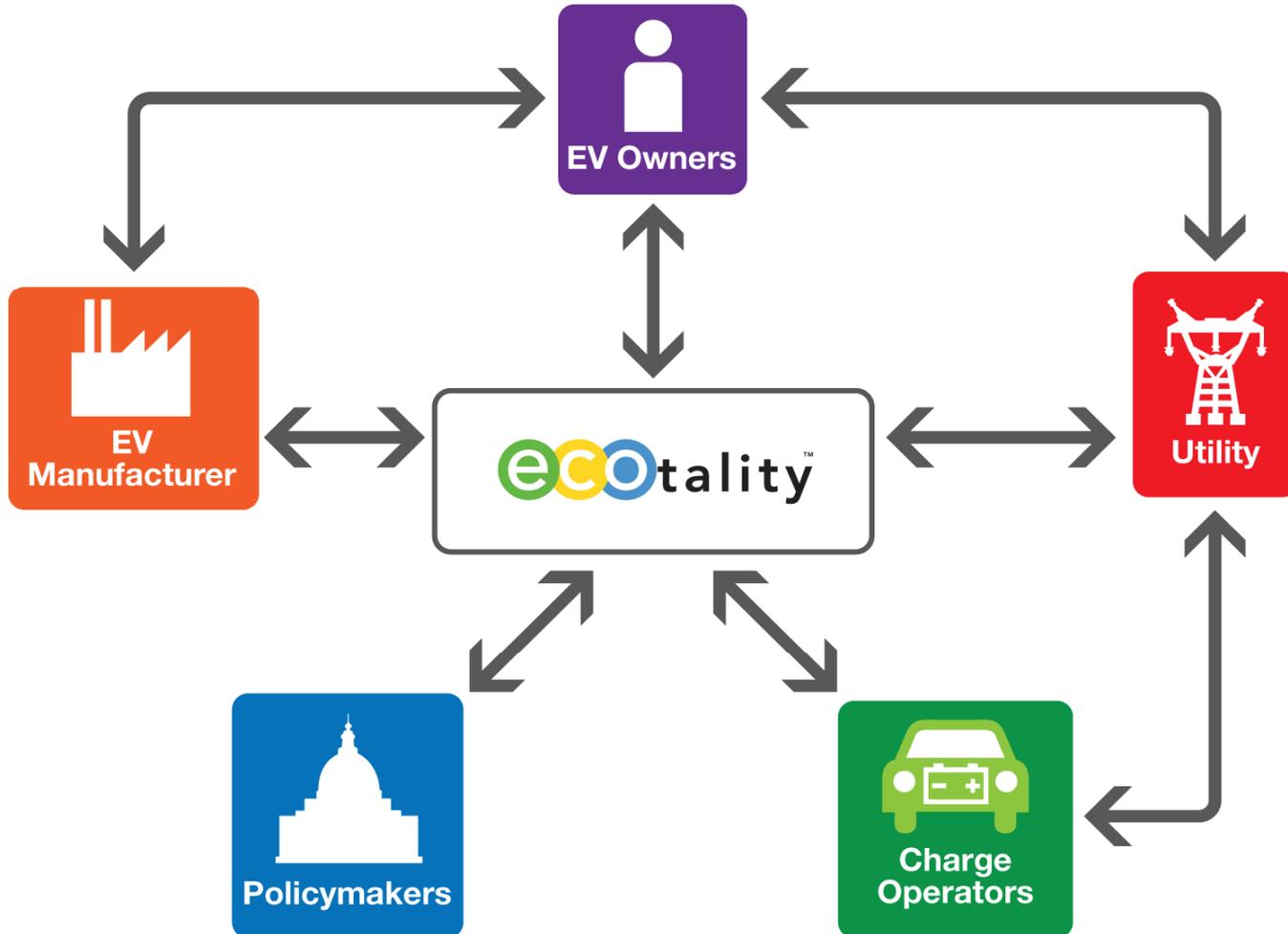
We would like to thank you for your hard work and support for the ETEC / Nissan proposal response for electric vehicle infrastructure (DE-FOA- 0000028). **If successful, the deployment of 5,000 Nissan zero-emission battery electric vehicles will be the largest EV deployment to date.** The stakeholders and supporters of this proposal is an impressive list of talented and dedicated groups who are well qualified to lead this process.

The final team includes:

- **350 Green**
- **American Lung Association of California**
- **ATX / Cross Country Automotive**
- **Bovis Lend Lease**
- **BP America**
- **CB Richard Ellis / Emerald Plug**
- **Center for Sustainable Energy (CA)**
- **Coulomb Technologies**
- **City of Chattanooga**
- **City of Knoxville**
- **City of Phoenix**
- **City of Seattle**
- **Eaton Corporation**
- **GridPoint**
- **Hamilton County (TN)**
- **Idaho National Laboratory**
- **iParkSolar**
- **Knoxville Utilities Board**
- **King County (WA)**
- **Maricopa Assoc. of Governments (AZ)**
- **Nissan North America**
- **Oak Ridge National Laboratory**
- **Ohio State University**
- **Pima Association of Governments (AZ)**
- **Portland General Electric**
- **Salt River Project**
- **San Diego Association of Governments (CA)**
- **San Diego Clean Fuels Coalition**
- **San Diego Gas & Electric**
- **San Diego Miramar College**
- **Seattle City Light**
- **Snohomish County PUD**
- **State of Oregon**
- **State of Tennessee**
- **State of Washington**
- **Tennessee Valley Authority**
- **Tucson Electric Power**
- **University of California-Davis**
- **Yazaki North America**
- **Zipcar**

Arizona EV Impact

- Reduced auto emissions to meet & exceed local, state & federal air quality standards
- 1,000 BEVs over 5 years = Reduction of 6.6 Million LBS of CO₂
- Allows Utilities to create Clean Mobility Model - from solar generation to EV's on the road – near zero emissions.
- Over 50% reduction in CO₂ Emissions (well-to-wheels)
- Continues and enhances leadership position for clean transportation technologies – and renewable energy
- Make AZ a launch site for all EVs, and positions region for immediate and continued stimulus infrastructure funding.
- Establishes a new market with ample “green collar” job opportunities



Integrated program to advance areas for the adoption of electric transportation

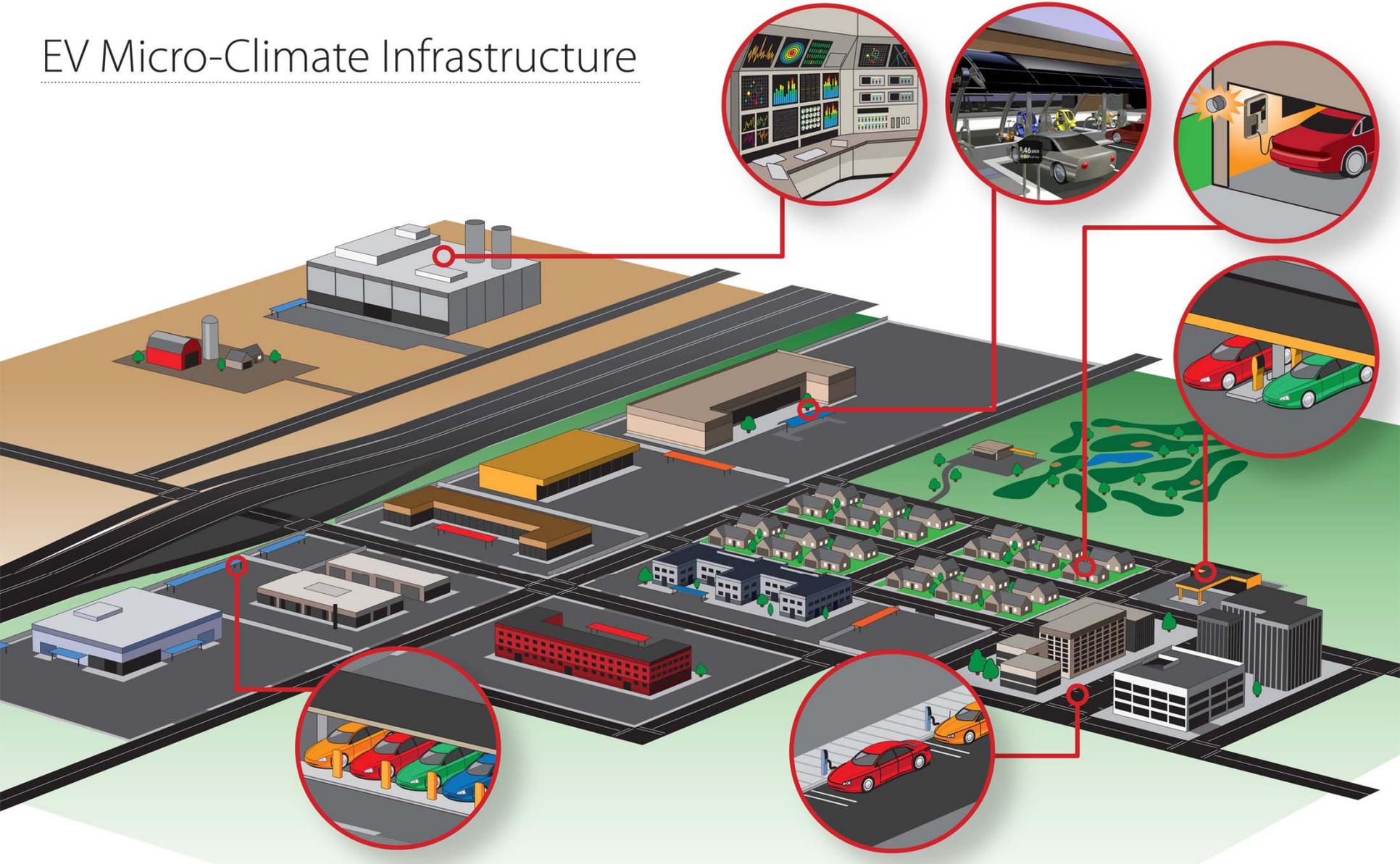
- Initial meetings have taken place with building code representatives to streamline permitting process – particularly residential.
- Initial meetings have taken place with retail property owners to determine willing participants.
- Nissan projections being done as to potential demographic distribution of vehicles to match up with recharge opportunities.
- Charger design underway for Nissan and public infrastructure.
- The summer (until August) is a period of planning internally and working with DOE to secure funding.
- DOE Contract Notification in July. Contract award in September.
- Public Infrastructure rollout 4th Q 2009 and all of 2010
- **Vehicle Roll-out October 2010**

Thank You

The logo for EV Micro-Climates features the letters 'EV' in a bold, blue, sans-serif font, positioned to the left of the words 'Micro-Climates' in a blue, italicized, sans-serif font. A registered trademark symbol (©) is located at the end of the text. The 'EV' is partially enclosed by an orange circle.

- Establishes a rich charging infrastructure in selected areas
- Extensive feasibility and infrastructure planning studies
- Provides detailed blueprint & action plans for successful execution and continued maintenance.
- Interface with relevant stakeholders to make sure area is prepared for electric transportation and fosters consumer adoption.
- Implementation includes physical installations + public awareness campaign
- ECOtality assists automotive manufacturers with home installations & provides fast charging systems in strategic locations
- **Create Public and Private alliances** to minimize the cost to taxpayers

EV Micro-Climate Infrastructure



Different Charging Levels

	Specifications	Time to charge batteries (10-30kWh)	Applications
Level 1 Charger	120VAC, 12Amps	8-24 hours	Emergency Use
Level 2 Charger	240VAC, 40Amp	2-8 hours	Residential, Commercial, Public Areas
Level 3 Charger	480VAC/ 3Phase 30kW to 250kW.	10-30 minutes	Commercial, Fleet use

- EV charging infrastructure would primarily include Level 2 & 3 charging systems.
- Level 2 applications include residential/garage, commercial charging stations (shopping malls, corporate offices, fleet facilities) & public charging stations (parking lots, street charging, etc...)
- Level 3 fast-charge stations will primarily be used in commercial locations (grocery stores, gas stations, outlet malls, etc..) as well as in fleet applications

Conceptual Fast Charge Stations

