

The EVProject State of Tennessee Implementation Plan

Purpose

The purpose of the Implementation Plan is to detail the process for and outline the continued importance of continued stakeholder engagement in the design and development process of The EVProject, the largest deployment of electric vehicles and electric vehicle infrastructure in the history of the United States of America.

The State of Tennessee is one of 6 states to experience the electrification of the transportation industry through the Department of Energy Vehicle Demonstration and Vehicle Infrastructure Evaluation (DE-FOA-0000028). Through a highly collaborative and interactive approach including policy makers, utilities, local and state government, grass roots organizations, the Department of Energy, major employers, charge operators and leaders of industry, ECOtality North America implements the EV Micro-Climate in the EVProject to successfully deploy electric vehicle infrastructure for the purpose of creating a Lessons Learned report about electric vehicles and electric vehicle charging infrastructure.

The ECOtality EV Micro-Climate™ is a process by which custom electric vehicle infrastructure results from the implementation of a standard process, a truly rich, highly functional and scalable electric vehicle charging infrastructure and growth strategy. This process involves a series of documents created together with a key stakeholder group that together comprise the framework from which the infrastructure develops. Continued stakeholder engagement ensures that the projects goals and objectives are met and provides opportunity to discuss the opportunities and challenges of using electricity as a fuel for our vehicles.

National Scope

The EV Project is the largest deployment of electric vehicles and charge infrastructure in United State of America and in history.

On August 5, 2009, ECOtality North America, a subsidiary of ECOtality, Inc. (NASDAQ:ECTY) was awarded a \$99.8 million grant from the U.S. Department of Energy to embark on this Project. The Project officially was launched on October 1, 2009 and will last approximately 36 months.



Nissan LEAF

O



Chevy Volt

On June 16, 2010, ECOtality announced expansion of The EV Project to include the cities of Los Angeles, California and Washington, D.C. The project was granted an additional \$15 million by the U.S. Department of Energy. With the partner match, the total value of the project is now approximately \$230 million.

ECOtality North America will deploy nearly 15,000 charging stations in 16 cities located in six states (Oregon, Washington, California, Arizona, Tennessee and Texas) and the District of Columbia. Nissan North American and General Motors/Chevrolet are partners in The EV Project. Drivers of the Nissan LEAF zero-emissions electric car and the Chevrolet Volt plug-in hybrid with extended range, who qualify to participate in The EV Project, a residential charger will be provided free, and most if not all of the costs of installation will be paid for by The EV Project.

The EV Project will collect and analyze data to characterize vehicle use in diverse topographic and climatic conditions, evaluate the effectiveness of charge infrastructure, and conduct trials of various revenue systems for commercial and public charge infrastructure. The ultimate goal of The EV Project is to take the lessons learned from the deployment of these first 8,300 EVs, and the charging infrastructure supporting them, to enable the streamlined deployment of the next 5,000,000 EVs.



Charging Infrastructure Locations

In 2010, charging infrastructure will be deployed in the following major population areas: Phoenix (AZ), Tucson (AZ), San Diego (CA), Los Angeles (CA), Portland (OR), Eugene (OR), Salem (OR), Corvallis (OR), Seattle (WA), Nashville (TN), Knoxville (TN) and Chattanooga (TN), Washington D.C., Dallas (TX), Fort Worth (TX), and Houston (TX).

Electric Vehicle Charging Station Technology

Within the EVProject, two types of electric vehicle charging stations are supported:

Level 2

DC Fast Charging

Charging Station Equipment

The EVProject will install two styles of Level 2 Electric Vehicle Supply Equipment (EVSE):

Wall Mount

Pedestal Mount



Level 2, standard electric vehicle charging equipment provides an AC charge where an electric vehicle owner can receive a either a boost in their state of charge in 1-3 hours or a complete charge in 4-8 hours, depending on the vehicle, voltage and state of charge of the vehicle. The connector for Level 2 charging has been standardized by the Society of Automotive Engineers and is called a J1772 (See appendix The J1772):



DC Fast Charging provides a DC charge directly to the vehicle battery where an electric vehicle owner can receive a boost in their state of charge in 5-15 minutes or receive up to 80% state of charge in less than 30 minutes. Not all vehicles can receive a DC charge and the connector has not been standardized by the Society of Automotive Engineers to date. The

EVProject will use the connector that is standardized in Japan and that the Nissan LEAF has as an option:



Tennessee Scope

The EVProject will bring 2,535 charging locations to the State of Tennessee. There are two types of electric vehicle charging infrastructure deployed in the EVProject: Standard Level 2 (L2) Charging Stations and DC Fast Charging installations (See appendix HARDWARE SPECIFICATIONS). There are 2,350 L2 Charging Stations: 1000 for the EVProject vehicle participants and 1,350 publicly available charging stations.

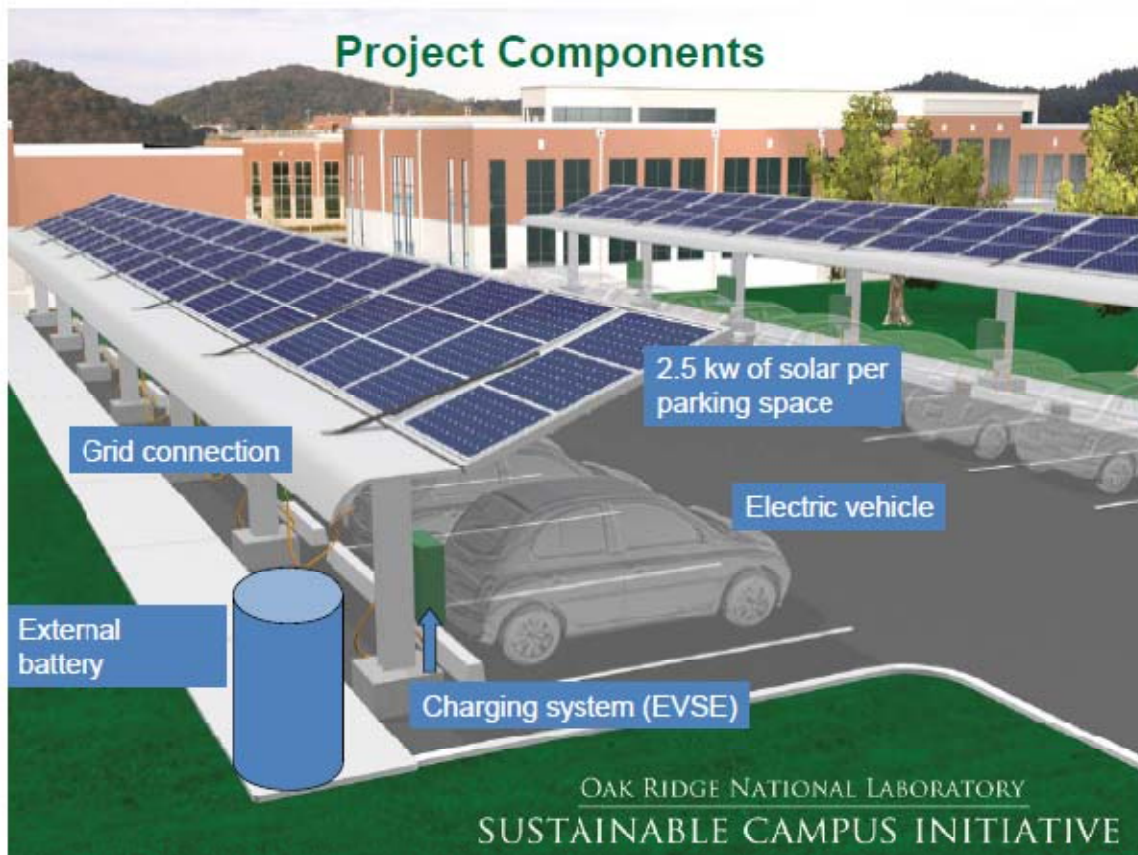
Hardware Infrastructure	Tennessee
Level 2 Vehicle Participants	1000
Level 2 Commercial	1200
Level 2 Municipal	150
DC Fast Charging	60
Solar Assisted L2	125

The publicly available charging stations are divided into two categories: commercial sites and municipal sites; and have two possible designs: wall mount or pedestal (See appendix PRODUCT SHEETS).

The Tennessee portion of the EVProject has an additional type of charging infrastructure deployed: solar-assisted charging stations. Oak Ridge National Laboratory received \$6.8M in grant funding within the \$99.8M American Recovery and Rehabilitation Act Department of Energy funding under DE-EE-0002194 for this demonstration project. ORNL, in conjunction

with the Electric Power Research Institute (EPRI) and the Tennessee Valley Authority (TVA), are seeking to study technical issues arising from vehicle charging infrastructure (grid response, etc) and to collect data on performance, component reliability, etc. and provide subsequent data reduction and analysis for deployment feedback. (See appendix ORNL Solar Assisted Charging Demonstration Project)

These provide a Level 2 charge and will be implemented within the TVA SMART Station. SMART is an acronym for Smart Modal Area Recharge Terminal. There are 125 charging stations that will be solar-assisted charging stations. (See appendix SMART Station)



Demonstration Projects

Tri-city Travel: Corridor Charging Pilot

Providing for the travel between project's core cities of Chattanooga, Knoxville and Nashville is another unique aspect to the Tennessee portion of the EVProject. The State of Tennessee will place charging stations along I-24, I-75 and I-40 as to allow for the ability to travel between the three cities.

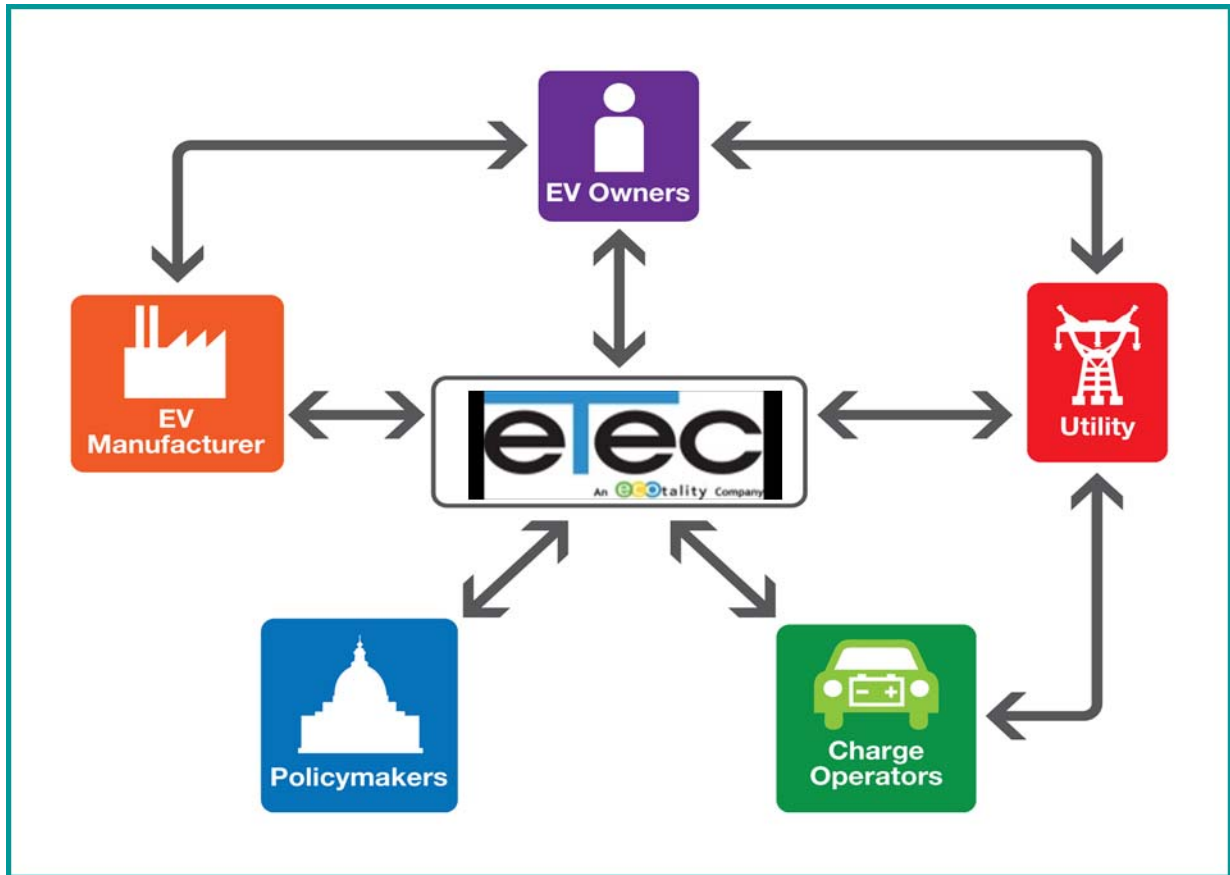
Other Special Projects

Within The EVProject, there is opportunity for special projects and pilot projects. ECOtality is exploring the opportunity to participate in various special projects including: smart grid integration with the Knoxville Utilities Board and the Electric Power Board, a workplace charging impact study coordinated by the Chattanooga, Knoxville, Nashville and State Chambers of Commerce, and a local garage-less needs analysis led by the Nashville

Metropolitan Planning Organization. Additional special projects may be considered. (See appendix SPECIAL PROJECTS).

Deliverables

One of the key deliverables for the EVProject is Best Practices for the implementation of electric vehicle charging infrastructure. ECOtality has an EV Micro-Climate Process that involves significant stakeholder interaction for the successful implementation of a truly rich, highly functional electric vehicle infrastructure that is customized to the needs of the local area.



This standard process results in a custom infrastructure whether it is applied on the macro level, as in the case of the EVProject, or on the micro level as with a particular organization or fleet as in our Clean Commute Program in New York City (See appendix ECOtality North America Projects).

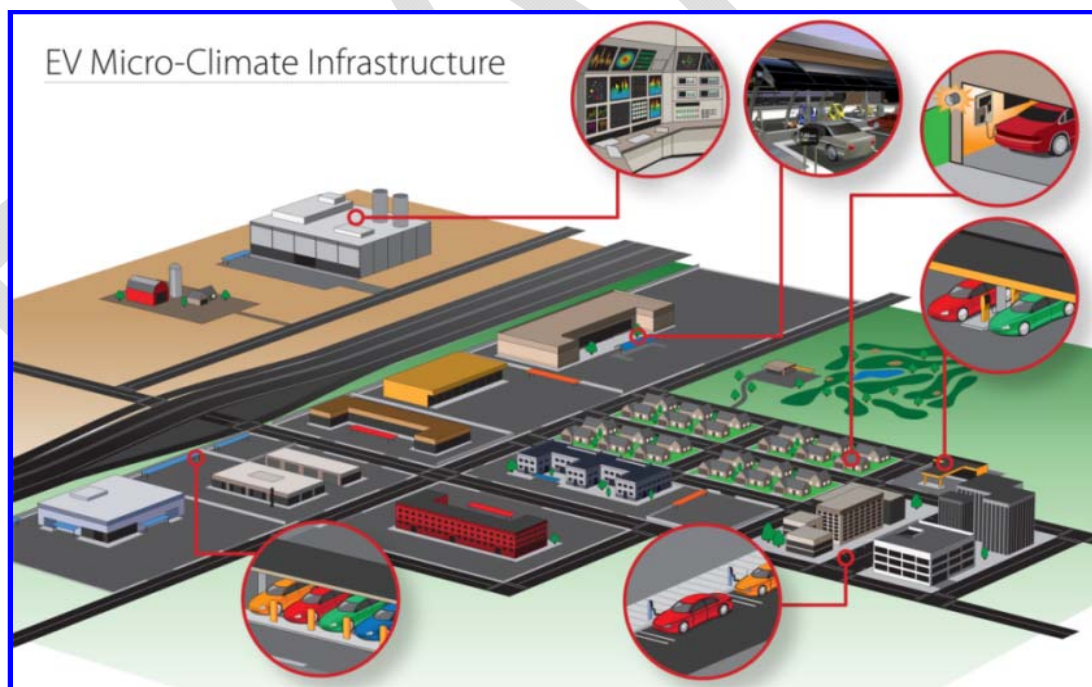
The Micro Climate Process encourages a very interactive relationship with all stakeholders. To manage this process, ORNL has provided a password protected web portal for information sharing and exchange. Through the web portal, the various project documents, research material, media clips, project presentations, meeting notes and agendas and schedule for the ECOtality staff are made available to the group for maximum stakeholder input. The result of the EV Micro Climate Process is a truly rich, highly functional and customized electric vehicle charging infrastructure.

EV Micro-Climates

ECOtality North America is highly experienced with installing electric vehicle (EV) charging stations in residential, commercial and public environments, and has installed more charging stations for on-road applications than any other company. ECOtality has developed its EV Micro-Climate program, as means of utilizing this experience to develop rich charge infrastructures, focused on Level 2 and Level 3 charging systems, as efficiently and cost effectively as possible.

ECOtality's EV Micro-Climate program is an integrated turn-key program that advances select areas for the adoption of electric transportation. Beginning with extensive feasibility and infrastructure planning studies, the program provides a blueprint for a comprehensive EV infrastructure system and provides detailed action plans for its successful execution and continued maintenance. ECOtality North America will coordinate relevant governmental organizations, utilities, automotive manufacturers, and strategic regional organizations to ensure that key cities are prepared for consumer adoption of electric transportation.

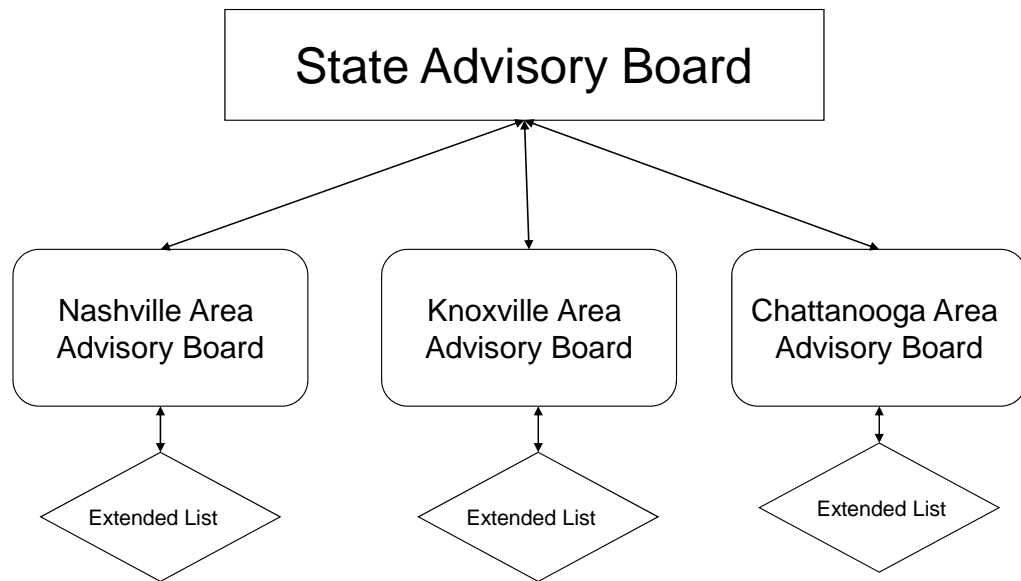
The implementation of an EV Micro-Climate includes physical charge infrastructure installations at residential, commercial and public locations, as well as comprehensive regulatory, public awareness and marketing programs to support the various value chains associated with the EV Micro-Climate.



Stakeholder Organization

There are four Advisory Boards that have been created for the EVProject in the State of Tennessee. The Advisory Boards review and contribute content to documents in the EVProject Process.

Stakeholder Organizational Chart



2

These documents include: The EVProject Infrastructure Deployment Guidelines (See appendix DEPLOYMENT GUIDELINES), the Long Range EV Charging Infrastructure Plan for Tennessee (See appendix LRP), and this document, the EVProject Implementation Plan.

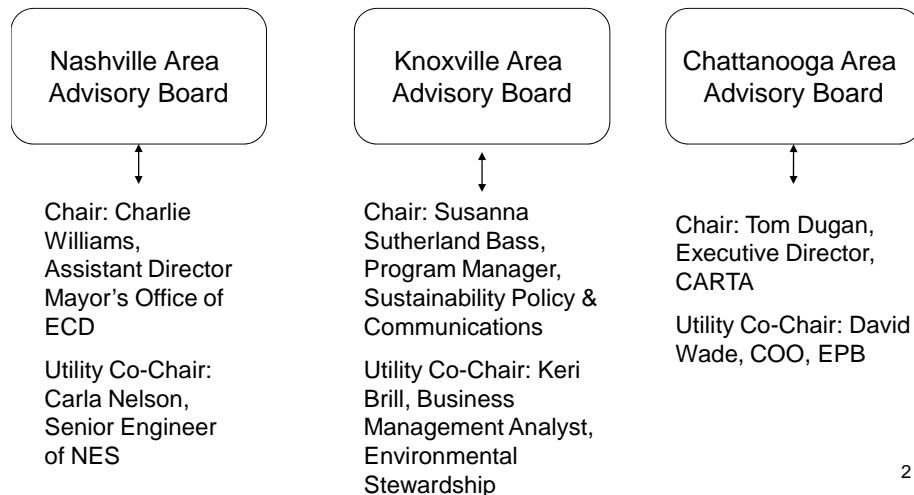
The Advisory Boards are: The EVProject State Advisory Board, the Chattanooga Area Advisory Board, the Knoxville Area Advisory Board and the Nashville Area Advisory Board. During Phase I of the Infrastructure Design Phase, the Advisory Board consisted of members and member organizations from the utility sector and the public sector.

The focus during this phase of the project is on the overall education of the near term needs to achieve the long term electric vehicle infrastructure growth plan. Policy issues, technology developments, impacts, opportunities and the considerations involved with wide spread EV adoption.

During the second phase of the Infrastructure Design, the board membership expanded to include members and organizations involved in alternative fuels, sustainable transportation, the private sector and those interested in electric vehicles and electric vehicle charging. (See appendix ADVISORY BOARD MEMBER ORGANIZATIONS and ADVISORY BOARD MEMBER LIST)

The Area Advisory Boards have a Local Government Chair and a Utility Co-Chair. The Area Advisory Board Chair will function as another point of contact for local area stakeholders, lead the local messaging, lead the siting focus group for the local area's municipal allocation of assets and assist in the coordination of the media and commercial partner outreach. The Area Advisory Board Utility Co-Chair will function as the point of contact for issues from a utility perspective for the area.

Area Advisory Board Chairs and Utility Co-Chairs



2

The function of the Area Advisory Board is to actively engage in the EVProject for the purposes of understanding the impacts of wide spread EV adoption. These members individually and as member organizations work together to coordinate happenings of the EVProject, work through challenges that arise and to collaboratively create a custom electric vehicle charging infrastructure for the specific needs of the local area.

Considerations Councils

In order to ensure that each opportunity and challenge is properly addressed throughout the EVProject, councils are formed for each major area of concern:

Permitting, Inspection and Standards
Utility Considerations
Siting Council
Media and Educational Outreach

These councils will meet periodically to ensure that project milestones are reached and that issues are either solved or logged and a strategy created. Quarterly, these councils will present to the Advisory Boards as to developments occurring within each area of focus.

These councils will also be responsible for coordinating and composing the addendums necessary for keeping the EVProject documents current. Scheduled addendum submission dates are:

November 2010
March 2011
December 2012
June 2013

Permitting, Inspection and Standards

The installation of EVSE requires permitting and inspection from the local permitting and inspection office. The Considerations Council for Permitting, Inspection and Standards will seek to create a streamlined permitting and inspection process for the EVProject and for Best Practices for wide spread electric vehicle deployment and keep current on electric vehicle charging equipment and installation standards. The State of Tennessee’s Department of Commerce and Insurance will lead this effort for permitting and inspection. The State of Tennessee has a strong interest in understanding how to ensure that the permitting and inspection processes can provide for a standardized and streamlined process. The Electric Power Research Institute (EPRI) in conjunction with the Tennessee Valley Authority (TVA) will lead this effort for developing Standards.

Utility Considerations

The use of electricity as a fuel requires the understanding and analysis of generation and electric grid impacts. EPRI and TVA will jointly work toward collecting the relevant industry, technology and policy developments for the utility considerations and provide for the methodology for information dissemination to the utilities involved within the Tennessee market and through the TVA territory, keeping the utility industry abreast of developments in the EVProject and in the electric vehicle and electric vehicle supply equipment industry.

Siting

Siting of the electric vehicle charging stations is a group effort of all the stakeholders. There has been established a goal of diversity by location of facility where charging occurs created with the intention of learning the places where people are most likely to recharge their electric vehicle using Level 2 Charging Stations. The State of Tennessee will have up to 1200 Level 2 Charging Stations and the following site types will be targeted within the EVProject:

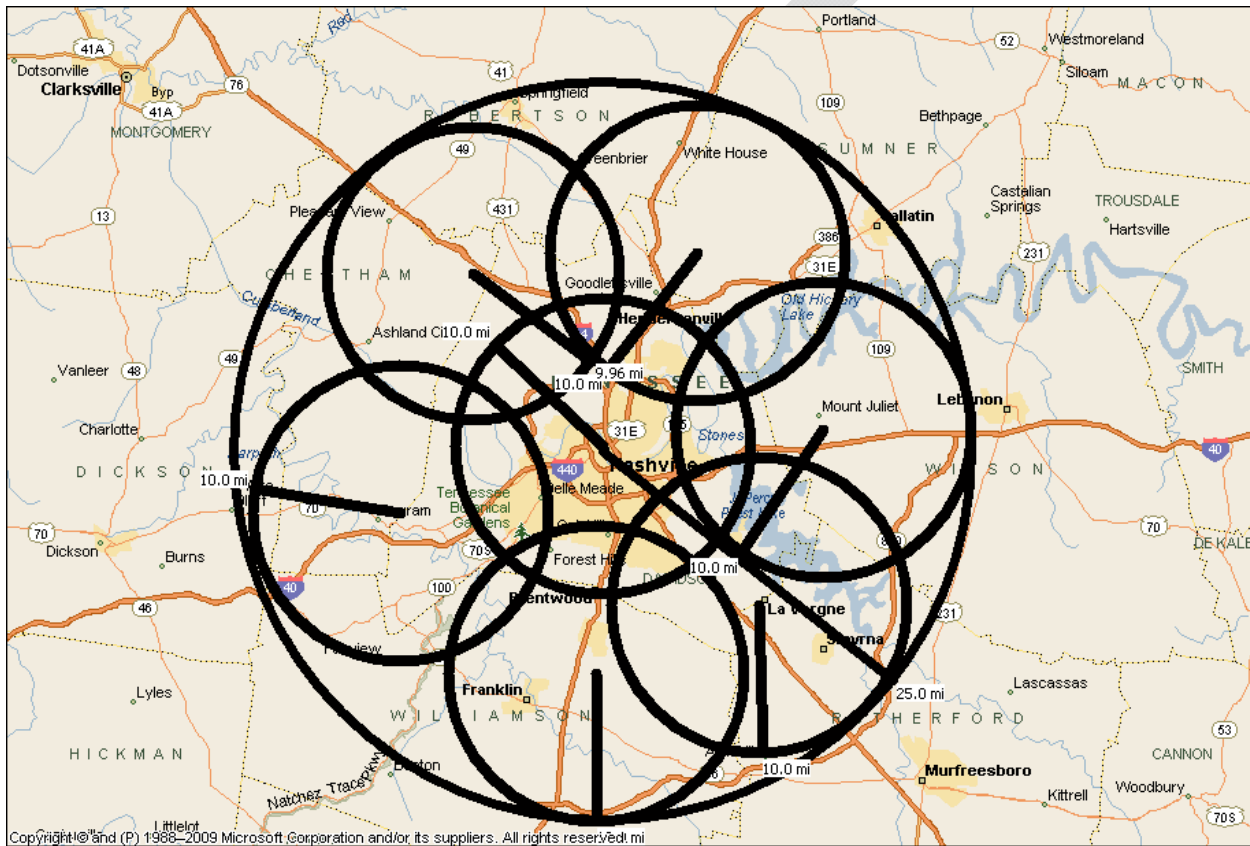
Airports		6
Community Center/Parks		60
Convention Centers		15
Destinations		80
Educational		60
Grocers		125
Hotels		80
Libraries		15
Malls		125
Medical/Hospital		80
Parking/Park & Rides		80
Police		15
Restaurants		125
Retail		125
Theaters/Museums/Arts		80
Universities		80
Sub Total		1151

Other		49
--------------	--	-----------

Total		1200
--------------	--	-------------

These targets will be satisfied through the combined efforts of National Accounts from ECoality North America and the local efforts of stakeholders and the Stakeholder Services Area Manager.

Within the 25 mile from city center boundaries for the blanketing of electric vehicle charging infrastructure, 10 mile radius' are drawn where a diversity of choice by charging location will be sought. Offering a choice as to location at which an electric vehicle owner will be able to charge will provide important information for the planning and development of the growth of electric vehicle infrastructure.



In order to ensure that the commercial partners are found to achieve a truly rich electric vehicle infrastructure, there needs to be input from multiple resources. The siting council consists of focus groups for industry specific attention (SEE APPENDIX FOCUS GROUPS):

Hospitality Siting Focus Group

Led by the Tennessee Hospitality Association and Tennessee Green

Medical/Hospital Siting Focus Group

Led by the Tennessee Hospital Association

Utility (subset occurring under the Utility Considerations Council)

Led by TVA and EPRI

University Siting Focus Group

Led by the State of Tennessee Department of Economic and Community Development
and Oak Ridge National Laboratory
Destinations Siting Focus Group
Led by the State of Tennessee Department of Tourist Development and the TN
Hospitality Association

Media and Educational Outreach

Messaging within the EVProject will involve events, publications and website linkage with the Chamber of Commerce from each area and with the stakeholder groups. Project milestones will be:

August: State Announcement regarding cash contribution and customer rebate program

August: City Specific Engagement and siting announcement

September: TVA Fuels Solutions Forum

September: Commercial Partner Announcements per area

Ribbon Cutting Ceremonies in each area

Vehicle Launch

Dedication

The Advisory Boards met regularly through teleconferences (See appendix Teleconference Schedule) and group meetings (See appendix Meeting Schedule). The meetings bring together key stakeholders to educate them on the project deliverables, initiatives, goals and challenges for the Tennessee portion of the EVProject for the purposes of interactively engaging them in the design and implementation of the truly rich and highly functional electric vehicle charging infrastructure. Notes from these meetings are documented and disseminated back to the group. Each stakeholder organization contributes time, energy, staff and resources to the EVProject on a continuing basis.

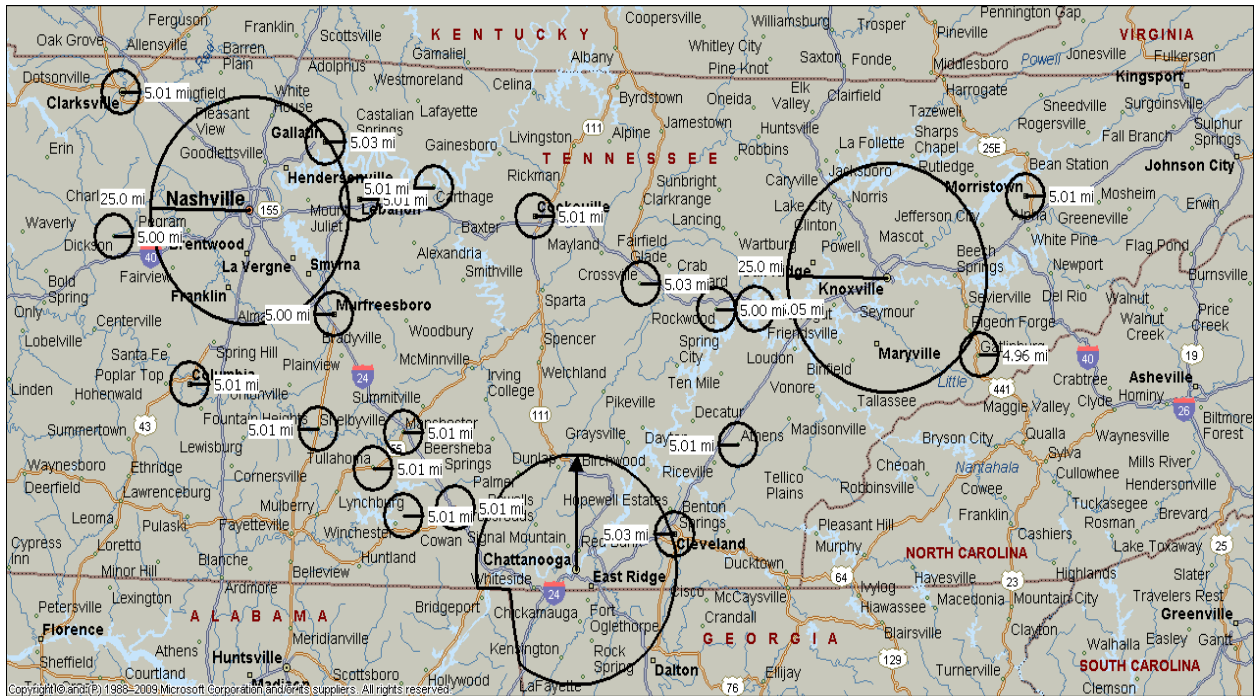
Electric Charging Hardware Infrastructure Hardware Footprint Boundary Design

The cities of Chattanooga, Knoxville and Nashville are the core project cities. In determining the area of coverage for electric vehicle charging infrastructure, the State Advisory Board considered: the zip codes of those eligible for EVProject vehicle participation, the anticipated demographics of EV purchasers, major employer locations, topography, population, commuting patterns, and Nissan LEAF Hand Raiser data.

Through the Nissan Customer Journey (<http://www.nissanusa.com>), those interested in getting additional information were registered as a hand raiser from 4/20/10 until May. At that time, they could reserve a LEAF with \$99. The anonymous geographic locations of those that registered through this process were reviewed on a periodic basis. The demographics of Hybrid owners to date were another layer of data reviewed. Together, these two data layers demonstrated where early adopters would be located.

The State of Tennessee's Department of Economic and Community Development supplied information on the location of the top 100 employers statewide. (See appendix Largest Tennessee Employers) These entities affect traffic patterns and commuter behavior. Their location was considered for the deployment of charging infrastructure in the understanding about where potential electric vehicle owners might travel.

The population density, topography, local and statewide traffic patterns are evaluated for the proper placement of infrastructure. The Tennessee Department of Transportation along with the Nashville Metropolitan Planning Organization, Knoxville Transportation Organization and the Regional Planning Agency and Planning & Design Studio from Chattanooga are integral in this ongoing data layer review.



Design

Design: Phase I

From March 2009 until June 2009, Phase I of the EVProject Infrastructure Design involved weekly teleconference meetings with each Advisory Board to discuss matters related to the successful implementation of a truly rich and highly functional electric vehicle charging infrastructure. We began each series with an initial kickoff meeting and held working sessions in each area midstream.

Each member organization was invited to participate with any members of their organization that was deemed necessary. Agendas were provided and notes taken for each meeting. (See appendix ADVISORY BOARD MEETING AGENDAS) There was a near 100% participation rate in the Phase I EVProject Advisory Board meetings and teleconferences.

Design: Phase II

Stakeholder Focus Groups

During Phase II, stakeholders will be encouraged to participate in focus groups. Focus groups will meet periodically to explore such topics as: media opportunities, industry events and messaging opportunities, ADA requirements, connection and communications standards development, policy issues with personnel and departments as designated by advisory board member organizations that will comprise the various focus groups. The focus groups will be

responsible for keeping the project documents current and relevant through the release of regularly scheduled updates and addendums. Updates are currently scheduled per the following schedule:

- November 2011
- March 2011
- December 2012
- June 2013

From July until October, Phase II of the EVProject Infrastructure Design, also referred to as the EVProject Roadmap Process, will seek electric vehicle charging hosting sites that will create the diversity of choice in charging location type that will result in a truly rich electric vehicle charging infrastructure. The number of electric vehicle charging stations by location type has been set. (See appendix INFRASTRUCTURE DESIGNATIONS BY LOCATION TYPE)

Implementation Process

Each potential hosting partner will initiate the EVProject Hosting Partnership process by submitting an executed Letter of Intent for EVProject participation (See appendix LETTER OF INTENT). The LOI demonstrates that an organization is interested in evaluating whether their location would be an ideal location for electric vehicle charging. The Hosting Partner is not obligated to participate in the EVProject through the Letter of Intent and ECOtality is not obligated to install EVProject e electric vehicle charging equipment at the site. The LOI is the first step in the process for being considered a potential charging location and EVProject Hosting Partner.

There will be a site assessment performed on each site to determine the ideal low cost installation scenario. (See appendix SITE ASSESSMENT FORM). The certified contractor network (CCN), managed by Bovis Lend Lease, will perform the site assessments and document any cost differential between the low cost installation scenario and the hosting partner's preferred installation site. Each commercial installation will have \$1,500 (per unit) for installation costs.

The conditional agreement for hosting a charging station will be provided to the hosting partner after the site assessment is complete. (See appendix COMMERCIAL CONDITIONAL AGREEMENT)

Deployment

The installation of the electric vehicle charging infrastructure will take place from November 2010 until September 2011. Throughout the infrastructure deployment, the implementation process will continue development and streamlining analysis. Midcourse corrections will be made when necessary.

The documents involved with the ECOtality Process will remain active and under ongoing evaluation and improvement resulting in complete project documentation of the Best Practices for growing electric vehicle charging infrastructure. Additions will be made to these documents as necessary with the following dates with expected addendum submissions: November 2010,

March 2011, September 2011, March 2012 and September 2012. Stakeholders will be involved as co-authors of these addendums.

Installation

Bovis Lend Lease (www.bovislendlease.com) is managing the Certified Contractor Network and will directly install all of the DC Fast Charging equipment placed in the EVProject.

Installation: Phase I

During the Installations Phases of the EVProject, discussions with potential Hosting Partners will continue. Installations will commence in November 2010 and complete June 2011. Installation will be broken down into two phases allowing for midcourse corrections, if necessary. Phase I of the EVProject Installation Process, November 2010 until March 2011, during Phase I of the Installation Phase of the EVProject

Installation: Phase II

EV Adoption

Infrastructure is coming...

Infrastructure is here...

DRAFT