Clean Cities 2011 EV Community Readiness

Southeast Regional EV Readiness Planning Program
PI: Stephen Clermont - Center For Transportation And The Environment

North Carolina PEV Readiness Initiative: Plugging In From Mountains To Sea
PI: Jason Wager - Centralina Council Of Governments

Trev Hall
U.S. Department of Energy
National Energy Technology Laboratory

May 16, 2013

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

Project ID: TI034

OVERVIEW

CTE: Clean Cities 2011 EV Community Readiness

- TIMELINE
  - Start: October 2011
  - End: June 2013
  - 90% Complete
    - Administrative Close-Out
    - Southeast EV Readiness Conference

- BUDGET
  - Total Project Funding: $ 740,400
    - DOE: $545,400
    - Cost Share: $195,000
  - Funded w/ FY11 & FY12 funds
  - $ 629,638 spent (85% as of 12/31/12)

- BARRIERS ADDRESSED
  - EVSE: Availability, Accessibility, and Awareness
  - Stakeholder Education/Marketing
  - Market Potential
  - Grid Impact Potential
  - Permitting, Zoning, and Signage

- PARTNERS
  - Clean Cities Coalitions (4)
  - Local Governments/State Agencies (11)
  - Agencies/Institutions (10)
  - Utilities (9)
  - Businesses (33)

BARRIERS ADDRESSED

- Stakeholder Education/Marketing
  - Consumers, Fleet Managers, Property/Facility Managers, Local Governments, EV/EVSE Salespersons, Utilities
  - Understanding Benefits, Costs, and Incentives
  - Understanding the Technology
- EVSE: Availability, Accessibility, and Awareness
  - Keys to reducing Range Anxiety
- Market Potential
- Grid Impact Potential
- Permitting, Zoning, and Signage

OVERVIEW

CTE: Clean Cities 2011 EV Community Readiness

PARTNERS

- Center for Transportation & the Environment
- Clean Cities Atlanta
- Alabama Clean Fuels Coalition
- Palmetto State Clean Fuels Coalition
- City of Atlanta
- South Carolina Institute for Energy Studies
- Southern Company
  - Alabama Power
  - Georgia Power
- Regional Planning Commission of Greater Birmingham

RELEVANCE

CTE: Clean Cities 2011 EV Community Readiness

Objectives:

- Community based electric vehicle infrastructure readiness plan and implement activities .
- Planning, and wherever possible, policy implementation and execution of planning elements for plug-in electric vehicles and charging infrastructure in the tri-state region of Alabama, Georgia and South Carolina and focusing on EV Deployment Clusters, Charging Corridors, and Corridor Anchors.
- Analysis of EV demand and projected EVSE requirements across the region.
- Best practices for EV/EVSE readiness will be merged into the Southeast Regional EV Deployment Readiness Plan.

Project Supports VTP Deployment Goals:

- By 2020, to achieve a petroleum reduction of over 2.5 billion gallons per year through voluntary adoption of alternative fuel vehicles and infrastructure.
- To ease market introduction of alternative fuels and new electric drive vehicle technologies through voluntary efforts in partnership with local communities
- To provide technical and educational assistance to support local communities and partnerships that promote better understanding of the benefits of these new technologies.

APPROACH

Statement of Project Objectives Tasks

Project Management and Administration

- The recipient will manage the cost, schedule and scope of the project and provide status and progress to the Department of Energy in accordance with the deliverables section of this document.

Phase 1: Project Initiation

- The recipient will formalize agreements among project partners, finalize the work plan, and formally kick-off the project.

Phase 2: EV/EVSE Demand and Impact Analysis

- **Task 1: EV Demographic Analysis**
  - Determine demographics of EV purchases across all segments, including individuals, public and private fleets.
- **Task 2: EV Demand Forecast**
  - Determine projected volumes and locations of EV deployments.
- **Task 3: Elasticity of Demand Analysis**
  - Determine impact on demand at various pricing levels of EVs, EVSE, electricity and gasoline.
- **Task 4: EVSE Demand and GIS Analysis**
  - Determine EVSE distribution requirements using a Geographic Information System (GIS) to project EV deployments and demographic utilization profiles.
- **Task 5: EV/EVSE Grid Impact Analysis**
  - Determine the impact that EV/EVSE will have on existing generation, transmission, and distribution (GTD) assets in each state and assess how different charging scenarios influence the number of EVs that can be recharged from the grid without adding GTD capacity. Assess the potential for bottlenecks in the grid in deployment locations. Develop a plan to address any identified weaknesses with respect to the demand and utilization forecast.
- **Task 6: Smart Grid Analysis**
  - Assess the benefits and costs of employing Smart Grid technologies to optimize the use of available grid resources. Determine the impact of deployment on of Smart Grid technologies. The study results will support the resource planning efforts of the utilities in each state and be incorporated into policy and incentive discussions.

Phase 3: Analysis of EV/EVSE Deployment Barriers and Solutions

- **Task 1: Stakeholder Workshops**
  - Plan, schedule, and conduct stakeholder workshops. The recipient will conduct a series of workshops to engage stakeholders in defining the policies, incentives, and procedures procedural barriers to EV/EVSE deployment and discuss potential solutions. Conduct required analysis to finalize solutions to establish regional/local policies, incentives and procedures. Define associated EV/EVSE readiness tasks.

Phase 4: Community EV/EVSE Deployment Readiness Plan Pilot

- **Task 1: Draft Southeast Regional EV Deployment Readiness Plan**
  - The recipient will develop and finalize a community based electric vehicle infrastructure readiness plan which contains and addresses, at a minimum, the critical elements 6-10 identified in the Sample Plan Outline, shown as Appendix 1 to Attachment 3 – Federal Assistance Reporting Checklist.

- **Task 2: Pilot Southeast Regional EV Deployment Readiness Plan**
  - Deploy the plan for communities to execute readiness tasks identified. Obtain feedback on the success of implementing policies, incentives and procedures.

- **Task 3: Finalize Southeast Regional EV Deployment Readiness Plan**
  - Using feedback from the pilot plan deployments, finalize the plan and prepare for distribution across the region. At a minimum, the critical elements 6 -10 identified in the Sample Plan Outline, shown as Appendix 1 to Attachment 3 – Federal Assistance Reporting Checklist will be addressed in the final plan.

Phase 5: EV/EVSE Deployment Readiness Communications & Outreach

- **Task 1: Define Southeast Regional EV Deployment Grant Model**
  - To support the deployment of EV/EVSE, the project will develop a model to prioritize EV/EVSE deployment to communities.
- **Task 2: Develop Communication Plan & Templates**
  - Communications templates will be created and distributed.
- **Task 3: Conduct Public Relations Campaign**
- **Task 4: Conduct Community Workshops**
- **Task 5: Conduct Regional EV/EVSE Readiness Conference**

APPROACH (cont.)
Statement of Project Objectives Tasks

- **Key Stakeholder Engagement Activities**
  - **Barrier/Solution Workshops**
  - **EV Readiness Workbook Pilot**
  - **EV Readiness Conferences**
  - **Environmental Conferences**
  - **Legislative Updates**
  - **Ride n Drives**

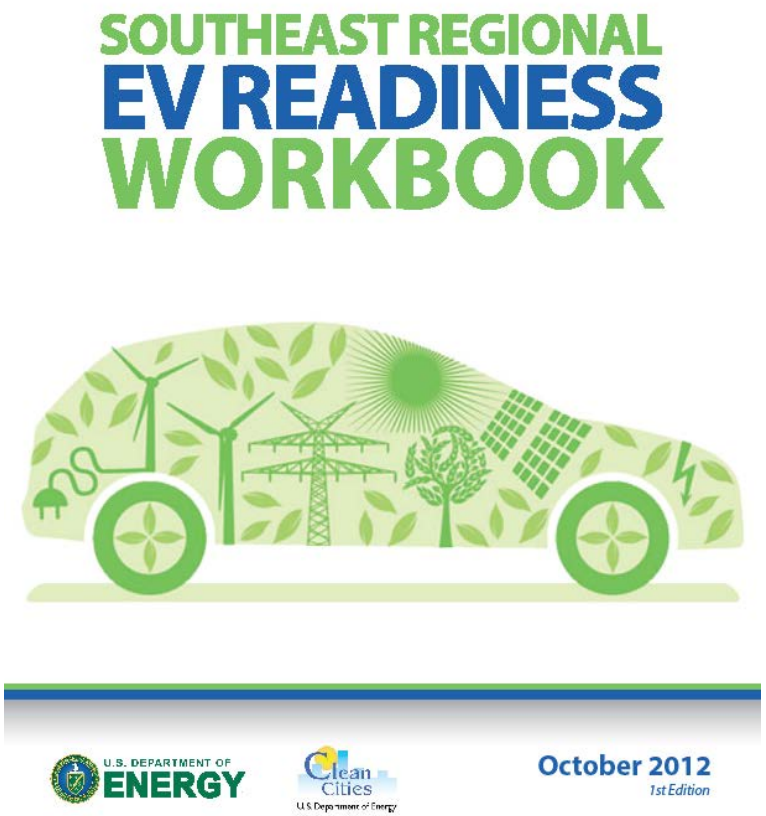
MILESTONES

CTE: Clean Cities 2011 EV Community Readiness

- **Year 1**
  - Phase 1: Project Initiation
  - Phase 2: EV/EVSE Demand & Impact Analysis
  - Phase 3: Analysis of EV/EVSE Deployment Barriers and Solutions
  - Phase 4: Community EV/EVSE Deployment Readiness Plan Pilot
  - Phase 5: EV/EVSE Deployment Readiness Communications & Outreach
- **Year 2**
  - Phase 4: Community EV/EVSE Deployment Readiness Plan Pilot
  - Phase 5: EV/EVSE Deployment Readiness Communications & Outreach

Deliverables/Products completed:

- EV Adoption in the Southeast
  - Forecast of EV Sales Demand
  - EVSE Placement Analysis
  - Grid Impact Analysis
- EV Readiness Workbook
  - Section I: Provides an overview of the objectives of EV Readiness, current state, and benefits of large-scale adoption of EV's
  - Section II: Provides a checklist and description of actions that each stakeholder group should take to improve EV Readiness
  - Section III: Includes case studies, installation guides, model ordinances, and external resources available to support EV Readiness activities



- **Barrier/Solution Workshops**
  - **Purpose: Educate stakeholders on EV Readiness and gather information about barriers and potential solutions**
  - **Conducted 10 workshops in 3 states, attended by over 120 stakeholders**
    - Property/Facility Manager Workshop
    - Fleet Manager Workshop
    - Government Workshop
    - Electrical Contractor Workshop
    - EVSE Workshop
    - EV OEM Workshop
    - Utility Workshop
- **EV Readiness Workbook Pilot**
  - Purpose: to obtain feedback on EV Readiness Workbook
  - Pilot Cities: Athens, GA and Spartanburg, SC

- **SE EV Readiness Conference Series**
  - **Purpose: To present findings and release the SE EV Readiness Workbook**
  - **Attracted over 200 attendees**
    - South Carolina EV Readiness Conference (Columbia, SC – Oct. 23, 2012)
    - Georgia EV Readiness Conference (Atlanta, GA – Oct. 24, 2012)
    - Alabama EV Readiness Conference (Montgomery, AL – Oct. 26, 2012)
  - **Included Exhibitors and Ride n' Drive**
    - **Ford, Nissan, GM, Smith Electric, Via Motors, Coda, Fisker, Ecotality, Proterra, GE, Metro-Plug-in**
- **Other Stakeholder Education/Awareness/Ride n' Drive events**
  - Presentation to the Georgia General Assembly Committee on Energy, Utilities & Telecommunications and Ride n' Drive at the State Capitol
  - Presentation and Ride n' Drive at Georgia Environmental Conference
  - Presentation and Ride n' Drive at Green Chamber of the South Lunch n' Learn

COLLABORATIONS

CTE: Clean Cities 2011 EV Community Readiness

- Clean Cities Coalitions
  - Alabama Clean Fuels Coalition
  - Clean Cities-Atlanta
  - Kansas City Clean Cities Coalition
  - Palmetto State Clean Fuels Coalition
- Local Governments/Agencies
  - City of Atlanta
  - City of Augusta
  - City of Chamblee
  - City of Spartanburg
  - DeKalb County
  - Georgia House of Representatives
  - Greenville County
  - Spartanburg County
  - State of Georgia
  - Town of Pacolet
  - Unified Government of Athens-Clarke County
- Other Agencies/Institutions
  - Carolina Clean Energy Center
  - Center for Transportation & the Environment
  - Clemson University
  - EPRI
  - EVITP
  - Georgia Institute of Technology
  - Gwinnett Environmental and Heritage Center
  - Regional Planning Commission of Greater Birmingham
  - Ritsumeikan University
  - State of South Carolina Energy Office
- Utilities
  - Alabama Power Company
  - Cobb EMC
  - Georgia Power Company
  - Greystone Power
  - Jackson EMC
  - Oglethorpe Power Company
  - Snapping Shoals EMC
  - Southern Company
  - Tennessee Valley Authority
- Businesses
  - American Fueling System
  - Coda Automotive
  - Coulomb
  - Eaton Corp
  - Ecotality
  - Estes Heating & Air
  - Ford Motor Company
  - General Electric
  - General Motors
  - Hertz
  - Hines
  - Hitachi America, Ltd.
  - Home Depot
  - Kia Motors
  - Lanier Parking
  - Leviton
  - Metro Plug-in
  - Mitsubishi
  - Navistar
  - Nissan
  - Pat Murphy Electric
  - Proterra
  - Smith Electric
  - Southern Charge
  - Tesla
  - Thurso Power
  - Toyota
  - Trane
  - United Parcel Service
  - Via Motors
  - Wheego
  - White Electrical
  - Zing!

SUMMARY

CTE : Clean Cities 2011 EV Community Readiness

- The Clean Cities Petroleum Reduction Technology Projects have commenced and are moving forward to meet aggressive progress and spending plans.
  - **Relevance:**
    - **Increase the deployment of alternative fueled vehicles and advanced technology vehicles** as a means to reduce U.S. dependence on imported petroleum, increase fuel economy and improve emissions.
    - **Provide appropriate training for individuals associated with this project and in the larger community about the benefits of alternative fuel and advanced technology vehicles** and provide them with strategies that will help them to maximize these benefits.
  - **Approach:** Project Planning, Vehicle Deployment, Infrastructure Development, Training & Outreach/Marketing and Data Collection activities per the approved Project Management Plan
  - **Project Accomplishments/Progress:** Creation and launch of Southeast Regional EV Deployment Readiness Plan and Workbook.
  - **Collaborations:** Clean Cities Coalition leading or partnering with State and Local governments/agencies/organizations and numerous other private & public partners
- Efforts will continue through May 2014

PROPOSED FUTURE WORK

CTE : Clean Cities 2011 EV Community Readiness

- Major Project Activities for the Next Year
  - Update EV Readiness Workbook
  - Continue with on-going Outreach/Marketing Programs
  - Close-out Project
- Enhanced Project Monitoring by DOE Project Managers
- Technical Assistance available from Clean Cities Program
- Potential for Future Work
  - Continue with on-going Outreach/Marketing Programs
  - Assist Communities with EV Readiness Activities, execution of the workbook, completion of DOE EV Readiness Scorecard
  - Assist in deployment and monitoring of EVSE infrastructure grants

Clean Cities 2011 EV Community Readiness

Centralina Council Of Governments
North Carolina PEV Readiness Initiative:
Plugging In From Mountains To Sea

PI: Jason Wager

Trev Hall
U.S. Department of Energy
National Energy Technology Laboratory

May 15, 2013

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

Project ID: TI034

OVERVIEW

Centralina: Clean Cities 2011 EV Community Readiness

- TIMELINE
  - Start: October 2011
  - End: June 2013
  - 97% Complete
  - 3% Remaining:
    - Administrative Close-Out
    - Southeast EV Readiness Conference
- BUDGET
  - Total Project Funding:
    $ 614,100 (DOE: $500,000/
    Cost Share: $114,100)
  - Funded w/ FY11 & FY12 funds
  - $595,622.93 spent
    - (97% as of 03/11/2013)

- BARRIERS ADDRESSED
  - Economic Incentives
  - Education/Outreach
  - Infrastructure
  - Policies, Codes & Standards
- PARTNERS
  - Clean Cities Coalitions (3)
  - Local Governments/State Agencies (4)
  - Utilities (3)

BARRIERS ADDRESSED

- The list of barriers and opportunities following this slide are a sample of those identified during the NC PEV Taskforce Symposium held at NC State University in Raleigh on October 27, 2011
  - Economic Incentives
  - Education/Outreach
  - Infrastructure
  - Policies, Codes & Standards

- Over 100 attendees participated to:
  - Establish the NC PEV Taskforce,
  - Introduce Working Groups, and
  - Participate in breakout sessions that allowed working group leads to receive a list of barriers and opportunities to explore over the following year.

The complete list of barriers organized by working group is available within Appendix 4 (page 155) of the NC PEV Roadmap.

Identified Barriers and Opportunities for the Statewide Plan	
Economic Development	
How can NC leverage its concentration and cluster of smart grid companies to encourage PEV related economic development?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item?(Reference the Appropriate Section of the Plan)*
Incentives	Yes- Incentives and Economic Development
Supply Chain Recruitment	Yes- Research Triangle Cleantech Cluster
Technical knowhow among economic developers	Not Addressed- progress made
What tools would help recruit PEV related companies to NC?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Incentives	Yes- Incentives and Economic Developing
Training	Yes- Education and Outreach
Demand	Yes- Vehicles

OVERVIEW

Centralina: Clean Cities 2011 EV Community Readiness

Vehicles	
What's your top concern if any about purchasing PEVs?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
No garage/rentals	Partially- Infrastructure
Safety	Yes- Education and Outreach
Range Anxiety	Yes- Education and Outreach
Standardization	Yes- Education and Outreach
Lack of Consumer Interest	Yes- Education and Outreach

Policies, Codes and Standards	
What groups/organizations have an interest in shaping PEV policy for public charging?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Governments	Yes- Policies, Codes and Standards
Electric Utilities	Yes- Utilities
PEV Industries	Yes- Incentives and Economic Development
Professional Associations	Yes- Various working groups
Safety Professionals	Yes- Education and Outreach
Are there any building codes and standards that should either be modified or created to cover the needs of PEV adoption?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Local codes	Yes- Policies, Codes and Standards
ADA	Yes- Policies, Codes and Standards
Grid back loading	No
Insurance	No

OVERVIEW

Centralina: Clean Cities 2011 EV Community Readiness

Infrastructure	
As a PEV driver, what is necessary from an infrastructure standpoint to mitigate the perceived range anxiety?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Fast Charge capabilities	Partially- Infrastructure
Station mapping	Yes- Infrastructure
Planning for future charging stations	Yes- Infrastructure
Rental car/car share options	Yes- Vehicle Working Group and Community Readiness Plans
Where would public charging infrastructure be best sited? (macro level)	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Corridors- Midway points between metropolitan areas	No- See Infrastructure
Retail locations/Lodging	Yes- Infrastructure
Entertainment Venues	Yes- Infrastructure
Parking Garages	Yes- Infrastructure
Colleges/Universities	Yes- Infrastructure

Incentives	
Why are Incentives Important?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Not all about cost, but fees also	Yes- Incentives and Economic Development
Cost, inspiring consumer confidence (categories)	Yes- Incentives and Economic Development
Psychology of Adoption	Yes- Incentives and Economic Development

OVERVIEW

Centralina: Clean Cities 2011 EV Community Readiness

Education and Outreach	
What fears, in your perception, do people have about PEVS?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Range Anxiety	Yes- Education and Outreach
Unknown	Partially
Cost	No
Battery Life	Partially- stakeholder identified in NC are working on this topic
What resources are needed for potential PEV related education providers (community colleges, independent consultants, etc.) to be able to provide necessary instructions?	
Response Categories	*Was this addressed or was there a recommendation with action plan to address item? (Reference the Appropriate Section of the Plan)*
Training	Partially- progress made in Education and Outreach
Online Tools	Partially- progress made in Education and Outreach
Media	Partially- progress made in Education and Outreach
Funding	Partially- progress made in Education and Outreach
General Information	Partially- progress made in Education and Outreach
Information Sharing Opportunities	Partially- progress made in Education and Outreach

PARTNERS

NC Grant Administrator for M2S Project:

- Centralina Council of Governments

Grant Sub recipients:

- Advanced Energy
- Land-of-Sky Regional Council
- NC Solar Center / NC State University
- Piedmont Triad Regional Council
- Triangle J Council of Governments

RELEVANCE

Centralina: Clean Cities 2011 EV Community Readiness

Objectives/Scope:

- The objective of this project is to create a community based electric vehicle infrastructure readiness plan and implement activities in anticipation of larger electric vehicle deployment efforts in the future.
- The Project's readiness planning will comprise parallel community and statewide planning efforts for North Carolina.
- A state-level NC PEV Plan will be developed to supplement the community readiness plans.

Project Supports VTP Deployment Goals:

- By 2020, to achieve a petroleum reduction of over 2.5 billion gallons per year through voluntary adoption of alternative fuel vehicles and infrastructure.
- To ease market introduction of alternative fuels and new electric drive vehicle technologies through voluntary efforts in partnership with local communities
- To provide technical and educational assistance to support local communities and partnerships that promote better understanding of the benefits of these new technologies.

Project Supports Local Initiatives:

- Municipalities, Research Universities and Utilities in North Carolina have been identified as leaders in the adoption of PEVs and charging infrastructure. The project supports a number initiatives that have resulted from local leadership:

PLUG-IN 2011 RALEIGH, NC JULY 18-21, 2011

Go4PEV.org Greater Charlotte Region Plugs In

Project Get Ready AN RMI INITIATIVE

NCPEV TASKFORCE

Task 1.0 - Project Management and Administration

- The recipient will manage the cost, schedule and scope of the project and provide status and progress to the Department of Energy in accordance with the deliverables section of this document.
- The recipient will develop a Project website to disseminate program information to the public and coordinate activities at the state level.

Task 2.0 – Develop Community Position Paper

- The Paper will serve as an overall community objective statement, detailing why the community is involved in the PEV planning efforts and proposed outcomes.

Task 3.0 – Recruit Community Stakeholders

- The recipient will identify and recruit community stakeholders needed to take part in PEV planning. Key stakeholders will include municipalities and the community employers. The recipient will locate PEV charging stations on corporate campuses and then, during implementation, work with employers to recruit employees to take part in PEV deployment.

APPROACH (cont.)

Centralina: Statement of Project Objectives Tasks

Task 4.0 - Customize Community Planning Matrix (CPM)

- The recipient will tailor a CPM to meet specific community needs. The CPM will be used to guide the planning process and to develop the Community Readiness.

Task 5.0 - Utility / Grid Considerations

- The recipient will collect EVSE load data to provide a better understanding of real world vehicle charging. The recipient will collect baseline data on charging behavior in order to understand potential grid impact of PEVs and facilitate a positive charging experience for PEV owners.

Task 6.0 - Coordinate/Host stakeholder meetings

- The recipient will form necessary working groups and conduct business and community education forums and workshops, such as Electrical Contractor and Inspector Workshops and First Responder Training. The recipient will facilitate meetings, conference calls and/or webinars in support of community planning activities and exchange of relevant community-specific information or concerns (steering committee, working group and stakeholder meetings, prep and follow-up).

APPROACH (cont.)

Centralina: Statement of Project Objectives Tasks

Task 7.0 - NC PEV Taskforce Development and Operation

- The recipient shall establish a state-level NC PEV Taskforce. The PEV Taskforce will include all of the project team plus other key stakeholders such as state, local, and, transportation authorities, other power producers and distributors, and vehicle and EVSE infrastructure manufacturers at a minimum. The full taskforce will receive updates on activities in the regions and of various state level work groups.

Task 8.0 - Community Readiness Plan

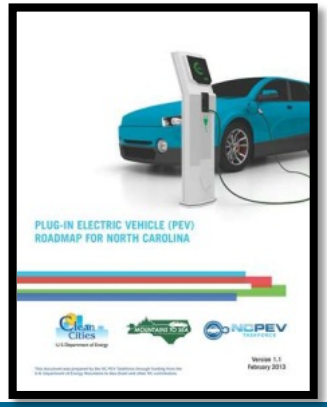
- The recipient will provide written, publicly releasable regional and statewide PEV infrastructure readiness plans with prioritized action items and suggested resources for implementation

APPROACH (cont.)

Centralina: Statement of Project Objectives Tasks

NCPEV TASKFORCE + Plugging in from MOUNTAINS TO SEA NC PEV Readiness Initiative

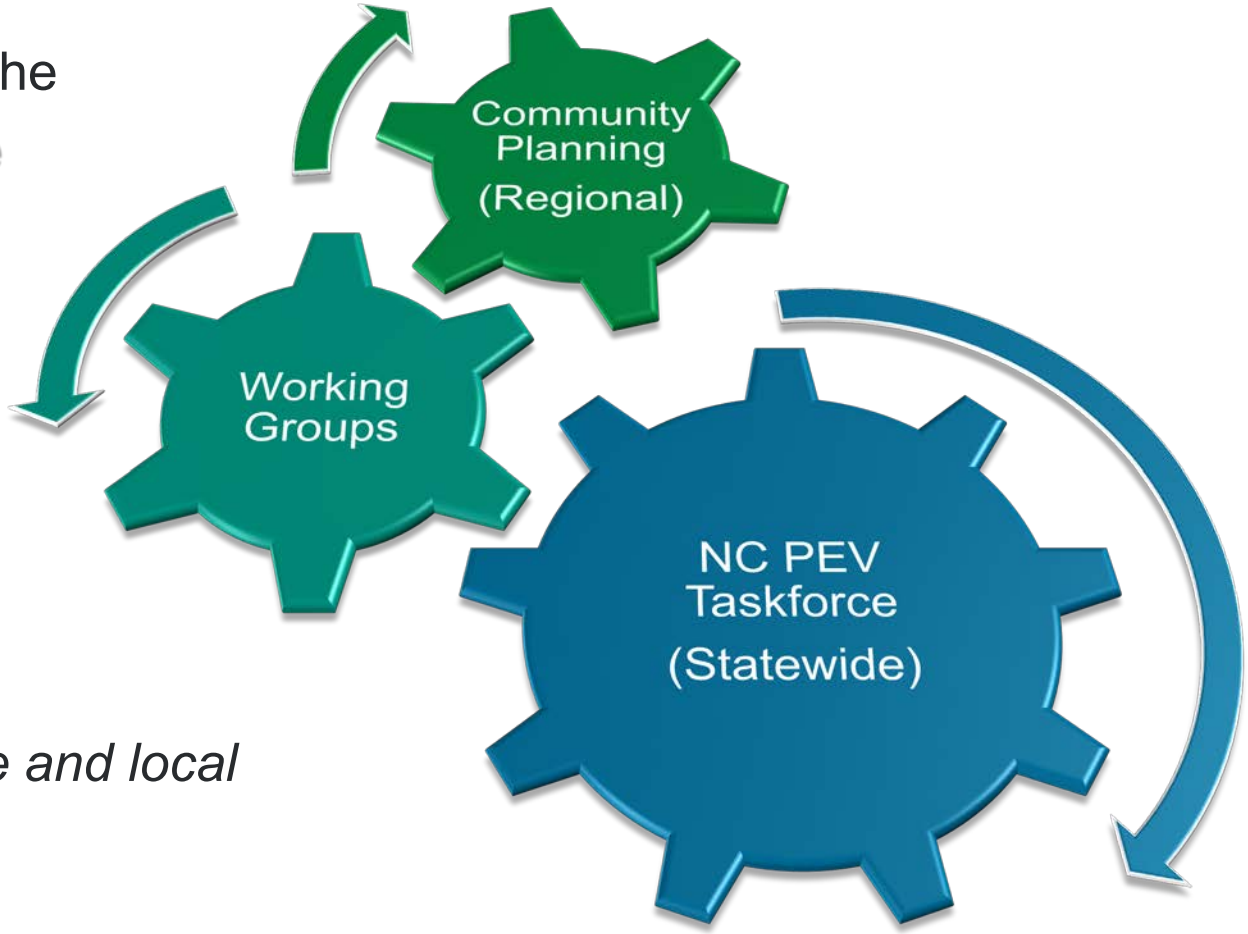
- NC PEV Taskforce
  - Education and Outreach
  - Vehicles
  - Incentives and Economic Development
  - Infrastructure
  - Policies, Codes and Standards



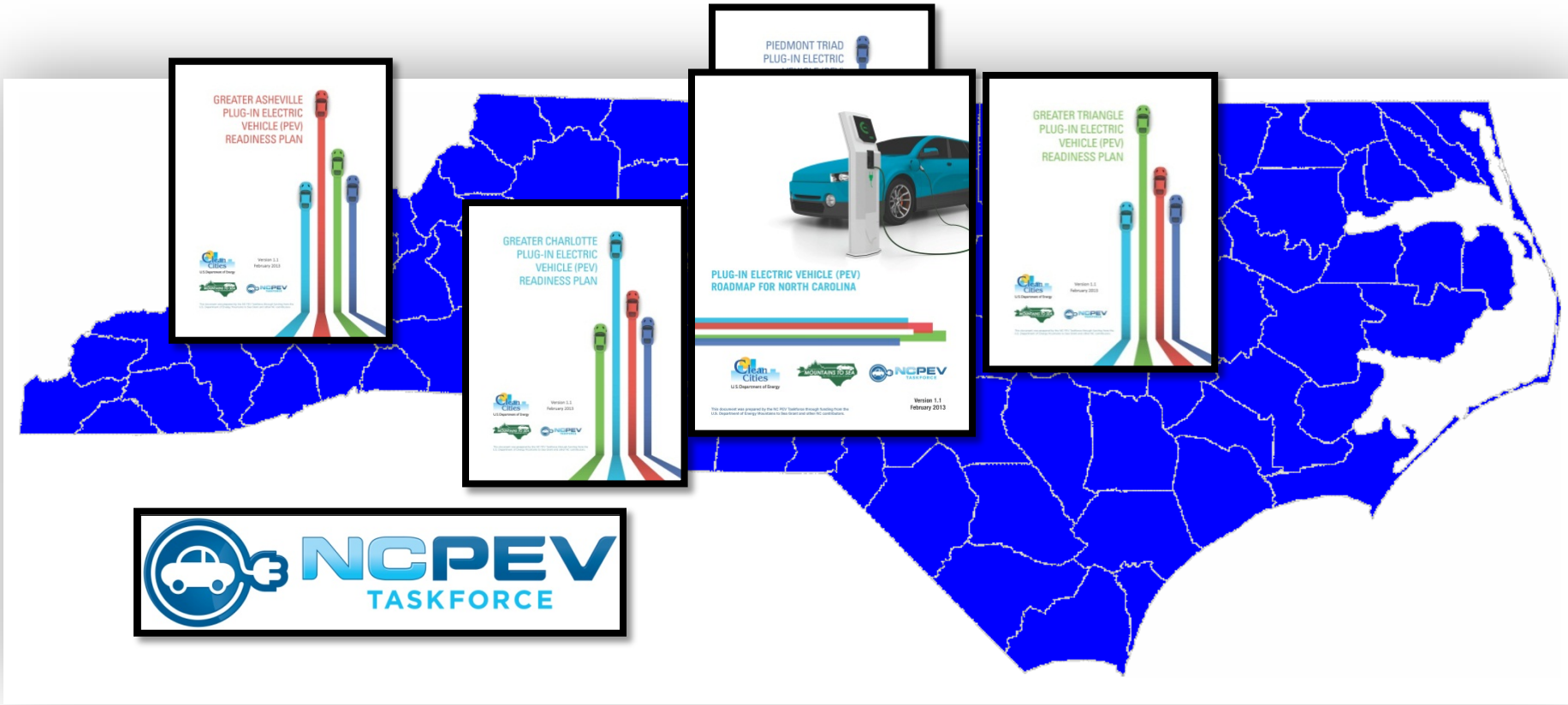
NC PEV Roadmap:
North Carolina's First PEV Readiness Plan

Stakeholder Involvement:

- Statewide through the **NC PEV Taskforce**
- Locally through **Community Planning** efforts
- Topically through **Working Groups** *(Active both at state and local levels)*



Multilateral Approach: Leveraging Collaboration



MILESTONES

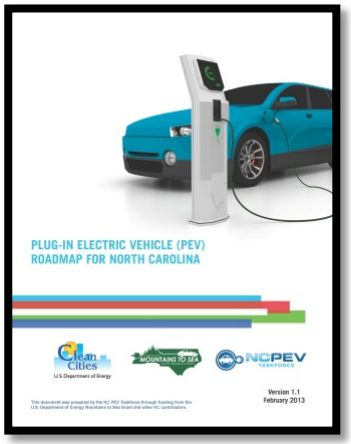
Centralina: Clean Cities 2011 EV Community Readiness

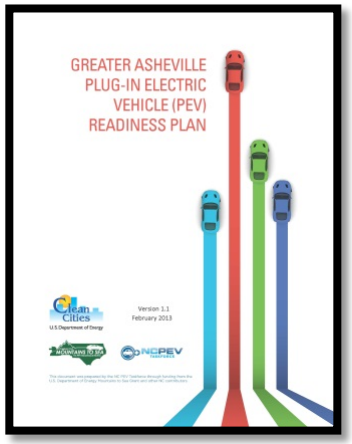
October 2011 – May 2013

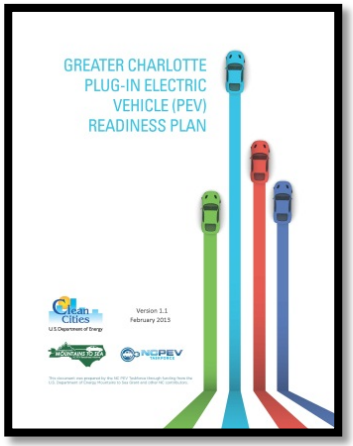
- Data gathering
  - 33 NC PEV Taskforce Steering Committee Meetings
  - 15 Local Stakeholder Meetings for Community Plans (Asheville, Charlotte, Piedmont Triad and Research Triangle region specific)
  - 40 state-wide meetings (conference call / in-person / webinar) hosted by NC PEV Taskforce Working Groups:
    - Infrastructure (8 meetings)
    - Vehicles (7 meetings)
    - Policy, Codes & Standards (10 meetings)
    - Education and Outreach- (9 meetings)
    - Incentives and Economic Development (7 meetings)
- Outreach of project
  - 4 Quarterly NC PEV Taskforce Meetings
  - Training for Code Official and First Responders
- Completion of Products
  - Version 1.0 of PEV Readiness Plans complete December 2012
  - Versions 1.0 of PEV Readiness Plans open by NC PEV Taskforce Steering Committee members from January 4 thru February 1, 2013
  - Version 1.1 of PEV Readiness Plans released publicly February 11, 2013
  - PEV Readiness Plans celebrated in Raleigh on March 13, 2013 with discussion focused on implementation strategies

Deliverables/Products completed:

- NC PEV Roadmap (state-wide plan)
- Four Local-Region Specific Plans PEV Readiness Plans





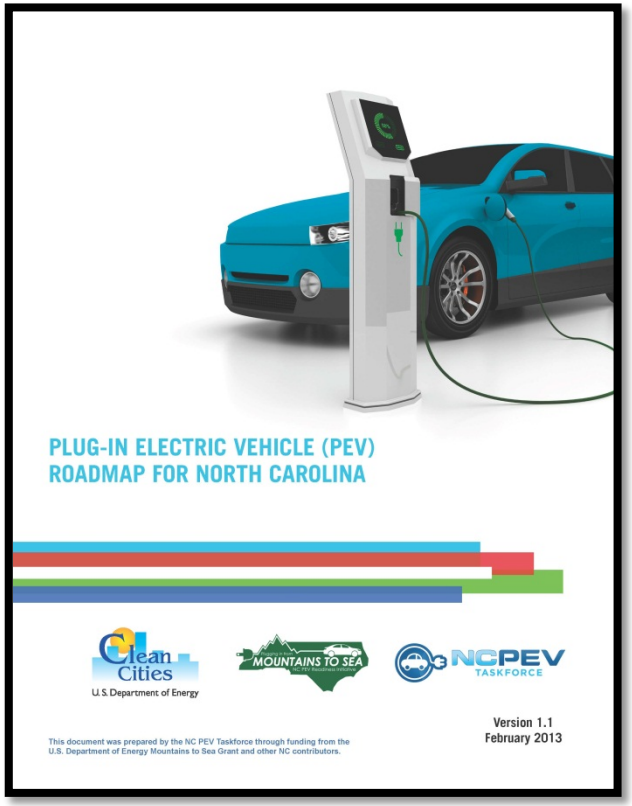


TECHNICAL ACCOMPLISHMENTS

Centralina: Clean Cities 2011 EV Community Readiness

Project Highlights:

- ✓ More than **700** PEVs registered in NC
- ✓ EPRI Estimates – more than **750,000** PEVs by 2030!
- ✓ **350** public charging stations
- ✓ **170** private charging stations
- ✓ Survey of incentives for fleet managers
- ✓ Review of policies, codes and standards:
  - Zoning
  - ADA
  - Local Planning and Policy Documents
  - Historic Districts
  - Signage
- ✓ 35 Events, Trainings, Workshops reaching over **2,000 people**



NC PEV Roadmap

COLLABORATIONS

Centralina: Clean Cities 2011 EV Community Readiness

The following entities are considered primary partners in the DOE funded NC PEV Readiness Initiative: Plugging in from Mountains to Sea

- Clean Cities Coalitions
  - Land of Sky Clean Vehicles Coalition
  - Centralina Clean Fuels Coalition
  - Triangle Clean Cities Coalition
- Local Government/Agencies
  - Land-of-Sky Regional Council
  - Centralina Council of Governments
  - Piedmont Triad Regional Council
  - Triangle J Council of Governments
- Technical Support Agencies
  - Advanced Energy
  - NC Solar Center / NC State University
- Utilities
  - Dominion
  - Duke Energy | Progress Energy Carolinas
  - North Carolina's Electric Cooperatives

COLLABORATIONS

Centralina: Clean Cities 2011 EV Community Readiness

The complete list of over 250 NC PEV Taskforce stakeholders can be found in the NC PEV Roadmap. The following entities are NC PEV Taskforce Steering Committee members and/or Community and Working Group Champions who were awarded for their participation in the NC PEV Readiness Initiative:

SUMMARY

Centralina: Clean Cities 2011 EV Community Readiness

- The Clean Cities Petroleum Reduction Technology Projects have commenced and are moving forward to meet aggressive progress and spending plans
  - **Relevance:**
    - **Increase the deployment of alternative fueled vehicles and advanced technology vehicles** as a means to reduce U.S. dependence on imported petroleum, increase fuel economy and improve emissions.
    - **Provide appropriate training for individuals associated with this project and in the larger community about the benefits of alternative fuel and advanced technology vehicles** and provide them with strategies that will help them to maximize these benefits.
  - **Approach:** Project Planning, Vehicle Deployment, Infrastructure Development, Training & Outreach/Marketing and Data Collection activities per the approved Project Management Plan
  - **Project Accomplishments/Progress:** Creation of five (5) PEV Readiness Planning documents: A statewide plan for North Carolina and four local-region specific plans
  - **Collaborations:** Clean Cities Coalition leading or partnering with State and Local governments/agencies/organizations and numerous other private & public partners
- Efforts will continue through May 2014

PROPOSED FUTURE WORK

Centralina: Clean Cities 2011 EV Community Readiness

- Major Project Activities for the Next Year
  - NC PEV Taskforce will continue to convene over 250 stakeholders recruited statewide since October 2011
  - NC PEV Taskforce will host a series of statewide webinars focused on implementation strategies recommended in NC's PEV Roadmap
  - The PEV Scorecard will support replication of the strategies outlined in the PEV Readiness Plans for NC municipalities not included in DOE funded planning boundaries
  - Workplace Charging Challenge will recruit businesses in the state to advance PEV Adoption
- Enhanced Project Monitoring by DOE Project Managers
- Technical Assistance available from Clean Cities Program