

Agenda

1. Welcome 11:00
 Opening remarks (Sec. Michael S. Regan, Chair)
2. Remarks by Governor Roy Cooper 11:05
3. Presentation of EO80 Plans 11:10
 - a) Clean Energy Plan (Sushma Masemore, DEQ)
 - b) NC ZEV Plan (DOT)
 - c) Motor Fleet Plan (DOA)
 - d) Workforce Assessments (Commerce)
- BREAK**
4. Updates on EO80 Directives and Progress 12:00
 (Brief updates from Cabinet secretaries on EO80 progress)
5. Public engagement 12:30

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Welcome

September 27, 2019

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DEQ Clean Energy Plan Update

September 27, 2019

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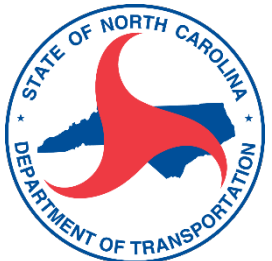
DOT NC ZEV Plan

September 27, 2019

North Carolina ZEV Plan

NCDOT Tasked with Developing Strategic Plan to Achieve the Following:

1. Establish interstate and intrastate ZEV (Zero Emission Vehicles) corridors
2. Increase the installation of ZEV infrastructure, such as charging stations
3. Incorporate best practices to increase the number of ZEVs registered in North Carolina



North Carolina ZEV Plan

Registration Goal in Executive Order No. 80, Section 5:

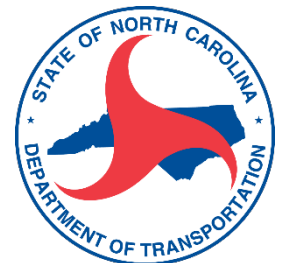
- Have at least 80,000 ZEVs (Zero Emission Vehicles) registered in state by 2025
- Current ZEV registration is 9,614, as of Aug. 31



North Carolina ZEV Plan

Environmental Objectives

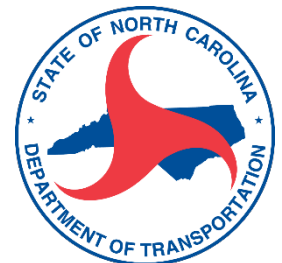
1. Reduce greenhouse gas emissions
2. Improve air quality
3. Enhance public health



North Carolina ZEV Plan

Economic Objectives

- Minimize cost of owning a ZEV
- Support market improvements
- Grow economy and jobs in this sector
- Provide statewide access to clean transportation technologies and their benefits

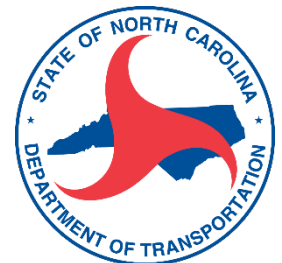
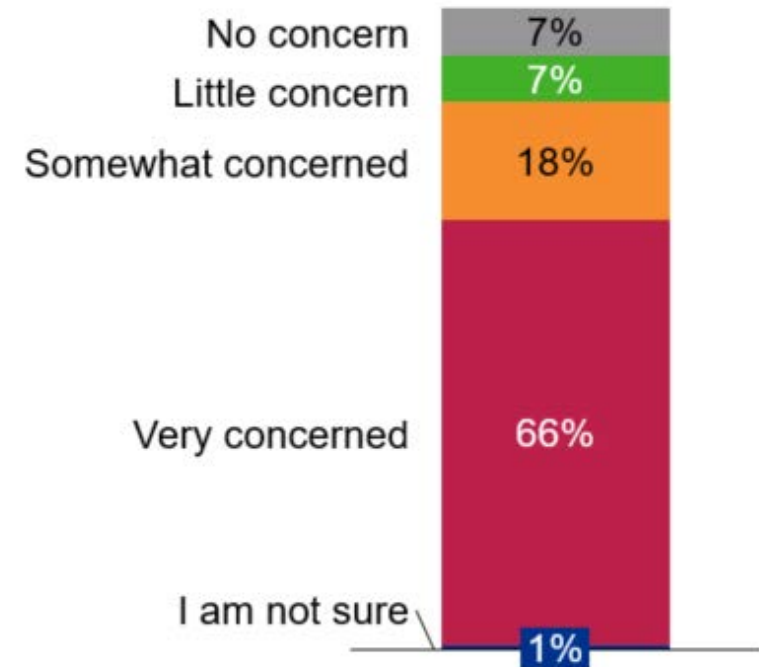


North Carolina ZEV Plan

ZEV Plan Also the Result of:

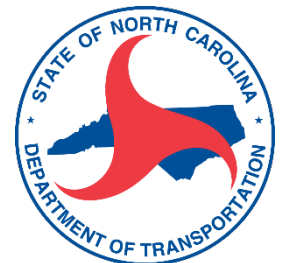
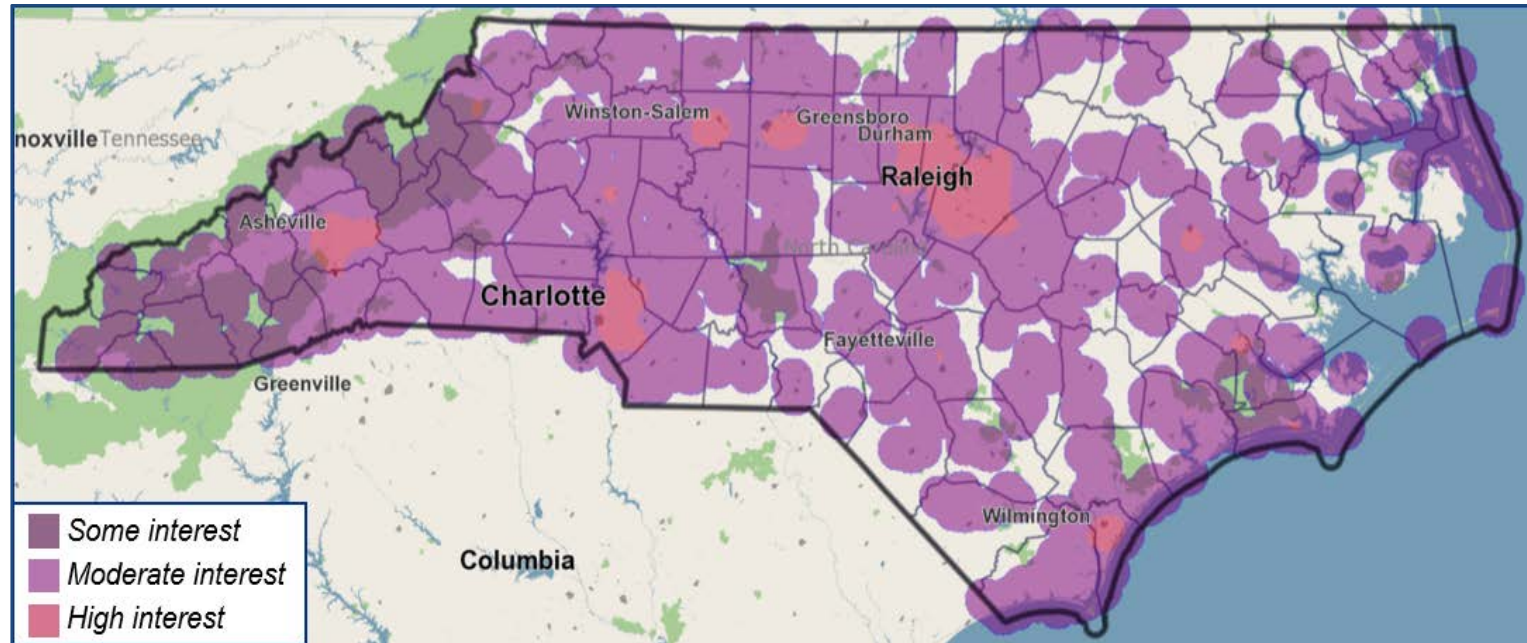
- Research into best practices in other states
- A MetroQuest survey (right)
- More than 200 public comments collected through early September

"How concerned are you about the effects of climate change on your daily life?"



North Carolina ZEV Plan

Public Interest in Locating New Charging Stations



North Carolina ZEV Plan Stakeholder Input



M.J. Bradley & Associates, LLC

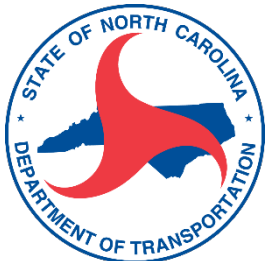


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North Carolina ZEV Plan

ZEV Plan Ideas Were Grouped In Four Categories:

1. Increase public education and marketing about ZEVs
2. Increase ease of vehicle recharging and comfort in overall electric vehicle market
3. Reduce upfront costs and help develop a used-car ZEV market
4. Establish policies that promote electric vehicle adoption



North Carolina ZEV Plan



Convenience

- ***Facilitate fast charging collaboration**
- *Develop workplace charging programs
- *Charging in rest areas
- ***Establish consistent wayfinding signage**
- *Enhance corridor definitions



Affordability

- *Financial Incentives
- *Original equipment manufacturer rebates
- *Green vehicle loans w/credit unions
- *Create dealership incentives
- *Encourage secondary electric vehicle markets



Education

- *Regularly post NC vehicle registration online
- *EV marketing campaign
- ***Coordinate Ride & Drive events**
- *Fleet education and outreach
- *Guidance document on charging infrastructure



Policy

- *Regional electric vehicle initiative
- *Electric vehicle user fees
- *Update building codes
- *Conversion to electric transit fleets
- *Motor fleet shift to zero emissions vehicles

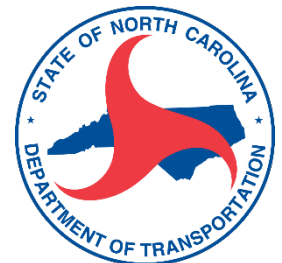
Bold Text indicates work already started



North Carolina ZEV Plan

North Carolina Well-Positioned for ZEV Use

However, additional action on public education, financial incentives and a coordinated implementation program are required for success.



North Carolina ZEV Plan



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DOA Motor Fleet Plan

September 27, 2019

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Motor Fleet ZEV Plan E080

Department of Administration

September 27, 2019



Plan Overview

- ▶ The plan outlines specific actions to be performed beginning in 2019, that will ensure EO 80 requirements are met and progress is made to reach target goals.
- ▶ Focuses on agency education, usage analysis, and vehicle infrastructure implementation.
- ▶ Identifies the types of trips for which a ZEV is feasible and potential ZEV replacement vehicles.
- ▶ Includes a thorough analysis of 2,417 vehicles within the state motor fleet of which 572 vehicles were identified as replaceable options to Electric Vehicles.
- ▶ Provides an accounting of current ZEV usage and miles driven by vehicle type

Current & Impending ZEV Usage in Motor Fleet

10 ZEVs in usage currently in the state motor fleet

20 additional ZEVs on order to be assigned by end of 2019

There are currently multiple ZEV models, charging station infrastructure equipment currently on state term contract and eligible to be ordered at any time by any state department or agency.

What's Next?

- Individual meetings with agencies
- Scheduling trainings and demonstrations
- Explore and identify funding options and incentive programs
- Incorporate new technologies, and additional ZEV models as options for purchase as they become available
- Collaborate with DOT for infrastructure needs

Benefits to State



Replacing all 572 vehicles identified in this analysis will save taxpayers an estimated \$3.8 million



Reduce emissions by over 22,000 metric tons over the lifetime of the vehicles.

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Commerce Workforce Assessments

September 27, 2019

Clean Energy & Clean Transportation Workforce Assessments

The Department of Commerce shall develop workforce assessments to:

- Evaluate **current & projected workforce demands** in North Carolina's:
 - **clean energy sector**
 - **clean transportation sector**
- Assess the **skills & education required** for employment in these sectors &
- **Recommend actions** to help North Carolinians develop such skills & education



Workforce Assessment Methodology

(Five Steps)

Step 1: Identify Relevant Industries contributing to Clean Energy & Clean Transportation

- Based on stakeholder input, literature review & existing data sources, analyzed three broad sectors:
 - **Clean Energy (18 industries)**
 - Power Generation (solar, wind, etc.), Transmission & Distribution, Storage & related Manufacturing, etc.
 - **Energy Efficiency (37 industries)**
 - Construction, Remodeling, Contracting & Manufacturing of efficient products & related Services, etc.
 - **Clean Transportation (33 industries)**
 - Motor Vehicle Parts Manufacturing, Trucking, Rail, Buses & other transportation, etc.



Workforce Assessment Methodology, cont'd

Step 2: Identify Relevant Occupations within each sector

- Based on staffing patterns, analyzed occupations comprising $\geq 1\%$ of workers in each industry (*These account for more than 2/3 of all workers in these industries*):
 - **Clean Energy (21 occupations)**
 - Electricians, Power-Line Installers, Construction Laborers, Operating Engineers, Team Assemblers, etc.
 - **Energy Efficiency (20 occupations)**
 - Supervisors of Construction, HVAC Mechanics & Installers, Plumbers, Carpenters, Team Assemblers, etc.
 - **Clean Transportation (15 occupations)**
 - Tractor-Trailer Truck Drivers, Light Truck or Delivery Drivers, Bus & Truck Mechanics, Bus Drivers, etc.



Workforce Assessment Methodology, cont'd

Step 3: Identify Relevant Characteristics of each Occupation

- Number of existing workers in each occupation
- Projected growth from 2017 to 2026
- Minimum educational requirement
- Average wages
- Ranking in NC Commerce 5-Star ranking system (based on job growth rate, openings & wages)
- Demographic characteristics of workers (e.g., age, gender, race, educational attainment)



Workforce Assessment Methodology, cont'd

Step 4: Measure *Supply* of Workers

- Enrollment & completion in key workforce training, education & apprenticeship programs
- Employment and wage patterns of individuals completing those programs
- Registered applicants in NCWorks Online
- Analysis of current employment patterns & source institutions for the selected industries

Step 5: Measures *Demand* for Workers

- Online postings aggregators, such as Conference Board's *Help Wanted OnLine (HWOL)*
- Feedback from employers & industry associations



Three Key Findings

1. NC has a large clean economy workforce in a range of industries & occupations

- Nearly **300,000 workers** currently work in clean economy industries
- While not all the industries are 100% “clean,” they **employ the workforce needed to transition to a clean economy**
- The industries employ workers in a **wide range of occupations, with jobs available at all education, skill & wage levels**



Findings, cont'd

2. NC is meeting current clean economy workforce needs overall—in large part because of its strong workforce & education systems

- **High School CTE programs, Community College programs & University Energy Research Centers** all contribute workers
- **1 out of 3 workers** currently working in the clean economy **has participated in a Community College education or training program**
- Over **29,000 credentials** were granted at all post-secondary institutions in the state **in relevant curricular programs**



Findings, cont'd

3. NC has opportunities to prepare its workforce for growth of the clean economy

- **Increased employer engagement with workforce & education partners** will be vital to meeting future needs
- Workforce & education providers should **increase awareness of job opportunities for youth** to develop the pipeline of future workers
- **Department of Commerce's** business & workforce development programs should be utilized to support the clean economy
- **NC should specialize in strategic sectors of the clean economy** (e.g., clean transportation manufacturing, solar, offshore wind)



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Updates on EO80 Directives & Progress

September 27, 2019

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Public Engagement

September 27, 2019