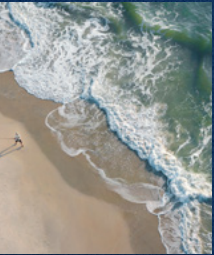


NORTH CAROLINA | AUTOMOTIVE & EV



NORTH CAROLINA

POWERING THE FUTURE
OF AUTOMOTIVE AND
ELECTRIC VEHICLES



WE CHOSE NORTH CAROLINA FOR SEVERAL REASONS, INCLUDING ITS EXTENSIVE AND WELL-MAINTAINED INFRASTRUCTURE, FOUR INTERNATIONAL AIRPORTS AND TWO SEAPORTS, ITS CONSISTENT RANKING AS ONE OF THE TOP STATES TO DO BUSINESS, ITS WORLD-CLASS EDUCATION SYSTEM AND, IMPORTANTLY, ITS OUTSTANDING AND DIVERSE WORKFORCE.

Christopher P. Reynolds,
Executive Vice President, Corporate Resources, Toyota Motor North America



NORTH CAROLINA:

ACCELERATING AUTOMOTIVE INNOVATION

POWERING THE FUTURE

20 **TOP SUPPLIERS**

Twenty of the top 100 global Original Equipment Manufacturer (OEM) automotive parts suppliers have operations in North Carolina. The state's robust supplier network is one reason leading automobile companies locate here.

25% **GROWTH**

Backed by an expanding cluster of vehicle parts manufacturers and EV battery component manufacturers, employment in this sector has surged since 2013. With the largest manufacturing workforce in the Southeast, it's easy to find the skilled workers your company needs.

250+ **AUTOMOTIVE COMPANIES**

North Carolina is home to over 250 unique automotive companies, including heavy-duty truck, body and trailer, engine and transmission, seating and interior trim, brake system manufacturing, and electric vehicle and battery manufacturing.

37K+ **EMPLOYEES**

More than 37,000 people work in North Carolina's automotive and EV sectors, with particularly high employment concentrations in truck, tire, vehicle body, transmission parts, and carbon and graphite product manufacturing.

INDUSTRY LEADERS CHOOSE NORTH CAROLINA



INDUSTRY RESOURCES

North Carolina has many programs and research centers that support automotive businesses:

NC Battery Complexity, Autonomous Vehicle, and Electrification Research Center at the University of North Carolina at Charlotte (UNC Charlotte) is driving innovation through cutting-edge research focused on autonomous vehicles, battery safety and optimization, materials science, and electromechanical engineering for energy storage. Referred to as the "BATT Cave," the research center is the first of its kind in the Southeast.

Energy Production and Infrastructure Center (EPIC), also located at UNC Charlotte, is a state-of-the-art research center where students, faculty, and industry partners collaborate on interdisciplinary energy research. Key industry partners include Duke Energy, Siemens Energy, and the Electric Power Research Institute.

The Center of Lithium Energy Advanced Research (Clear Lab) at Livent's manufacturing, research and development center in Bessemer City is dedicated to finding and testing new energy storage. Each step of the lithium-ion battery value chain from cathode/anode producers to battery producers to OEMs can partner to utilize the lab and Livent's scientists to conduct advanced materials' testing and research.

The North Carolina Clean Energy Technology Center (NCCETC) at North Carolina State University promotes the sustainable energy economy by providing support for clean energy technologies, practices, and policies. NCCETC's Clean Transportation program is focused on driving the development, awareness, and use of alternative fuels and advanced transportation technologies.

TALENT & LABOR

North Carolina ranks in the top five states for completions in automotive-related degrees, with our state's 110 universities and community colleges conferring over 1,700 bachelor's degrees in mechanical, industrial systems, and electrical engineering annually along with 2,500 automotive systems, mechanical, industrial, and electrical engineering technology associate degrees annually. Our higher education institutions are also creating partnerships to develop curriculum that equip students with skills needed for electric vehicle manufacturers.

GROWING NORTH CAROLINA'S AUTOMOTIVE TALENT PIPELINE

- **Steps4Growth:** a \$23.7 million Clean Energy Workforce Development grant led by North Carolina Agricultural and Technical State University's (NC A&T) Center for Energy Research and Technology, this grant enables partners in clean energy industries and organizations to partner with educational institutions in North Carolina to build a workforce training and employment system focusing on energy efficiency, renewable energy, clean vehicles, and grid and resiliency.
- **Automotive Systems Technology:** approximately 2,500 students are enrolled in the Automotive Systems Technology program across North Carolina's community colleges, learning theory, maintenance, systems, and diagnostics processes of vehicles. The largest enrollments by school are Wake Technical Community College (Raleigh), Central Piedmont Community College (Charlotte,) and Guilford Technical Community College (Greensboro), each of which has partnerships with global manufacturers including Audi, BMW, GM, Tesla, and Toyota.
- **University of North Carolina at Charlotte Motorsports Engineering:** a concentration within the mechanical engineering department, students in this program study automotive power plants, road vehicle dynamics, vehicle aerodynamics, CAD/CAM, process control and metrology, and more.

OCCUPATIONS AND JOB GROWTH

Occupation	Labor Availability	NC Job Growth (2013 - 2023)	Average Annual Earnings (% Below National Average)
Assemblers & Fabricators	66,600	5%	\$36,500 (5%)
Industrial Machinery Mechanics	15,000	66%	\$56,200 (6%)
Welders	14,100	49%	\$46,800 (2%)
Industrial Engineers	10,200	42%	\$86,300 (12%)
Electrical & Electromechanical Assemblers	8,600	20%	\$39,000 (0%)
Mechanical Engineers	8,100	16%	\$84,400 (15%)
Electrical Engineers	5,500	19%	\$100,000 (3%)

Source: Lightcast 2024

MOMENTUM IN NORTH CAROLINA'S EV SECTOR

North Carolina is a leader in the nation's rapidly growing electric vehicle (EV) sector. In 2023, companies within the electric vehicle supply chain announced new and expanding operations with investments totaling nearly \$10 billion. Our central East Coast location makes it easy to access existing customers and ship products worldwide. North Carolina is home to the largest hard rock lithium deposit in the US, and produces more than 60% of the critical component silicon carbide (SiC) used in EV chips.

SPOTLIGHT: RECENT EV INVESTMENTS STATEWIDE

Suppliers

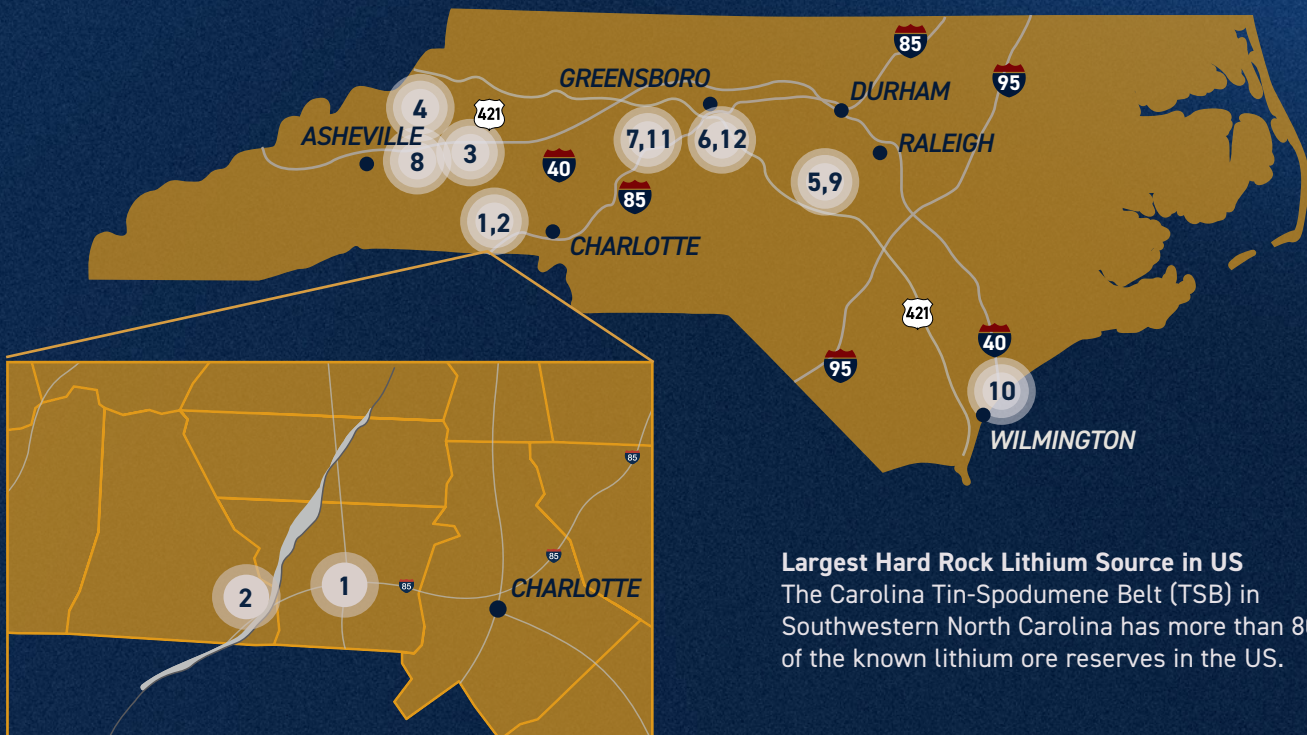
1. Piedmont Lithium
2. Albemarle Corporation
3. SGL Carbon
4. Sibelco

EV & Battery Manufacturers

5. VinFast
6. Toyota
7. Siemens Mobility
8. Forza x1

EV Battery Component Manufacturers

9. Wolfspeed
10. Epsilon Advanced Materials
11. Dai Nippon Printing
12. Fujihatsu & Toyotsu Battery Components, NC LLC



Largest Hard Rock Lithium Source in US
The Carolina Tin-Spodumene Belt (TSB) in Southwestern North Carolina has more than 80% of the known lithium ore reserves in the US.

NORTH CAROLINA:

AN INTEGRATED CLEAN ENERGY SUPPLY CHAIN



HOME TO CRITICAL RAW MATERIALS DEPOSITS

- The Kings Mountain Mining District near Charlotte, is the largest known and highest quality spodumene (hard rock lithium) deposit in the country.
- Several of the world's top lithium producers including Albemarle Corporation, Piedmont Lithium, and Livent planted their headquarters here and have active lithium mining plans in development, making North Carolina one of the largest concentrations of advanced lithium processing experts in the Western hemisphere.
- The Spruce Pine Mining District near Asheville, is one of the largest suppliers of high-purity quartz, used in the manufacture of silicon for integrated circuits.



ELECTRIC GRID RESEARCH & DEVELOPMENT

- North Carolina sits at the forefront of modernizing electrical infrastructure. Industry leaders are pioneering new grid technologies in charging infrastructure, power and distribution transformers, grid integration, and sustainable electrification.
- Several leading global energy companies including Siemens Mobility, ABB, and Hitachi Energy operate research and development facilities in North Carolina.
- EV charging station manufacturers choose North Carolina for their new operations. In 2023, Kempower, alpitronic Americas, and Atom Power announced new or expanding operations in Durham, Charlotte, and Huntersville respectively.



PROXIMITY TO SUPPLY CHAIN COMPONENTS AND CUSTOMERS

- As a top source of spodumene, high purity quartz, and producer of lithium hydroxide, North Carolina contributes to all four steps in the EV supply chain, eliminating the need to ship products abroad mid-process.
- North Carolina's central East Coast location and two deep-water seaports offer easy access to domestic and international markets. Companies also have convenient access to automotive manufacturing clusters in South Carolina as well as the Ports of Charleston and Savannah.



ECONOMIC
DEVELOPMENT
PARTNERSHIP of
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