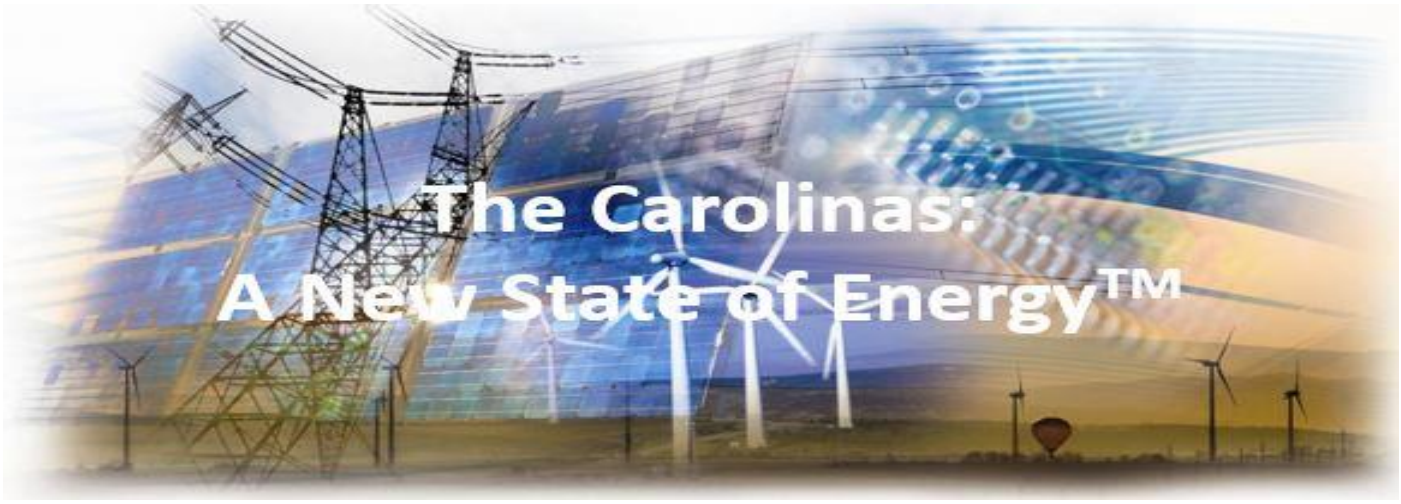


Why the World Comes to the Carolinas for Their Energy Solutions

The Carolinas is believed to be the largest energy economy in the eastern United States and among the most diverse in the world. Many call The Carolinas: A New State of Energy™. With thousands of energy companies and organizations, the Carolinas is recognized globally as a “one-stop shopping” destination for energy solutions. Companies, energy ministries and trade offices from Africa, Asia, Europe, the Pacific Rim and elsewhere in the Americas routinely visit the Carolinas to secure products, services and processes for their energy needs.

Contact the E4 Carolinas staff to arrange your visit to the Carolinas and connect with the energy companies and organizations having the energy solutions you need. Read more below of the many energy sectors in which the Carolinas excel.

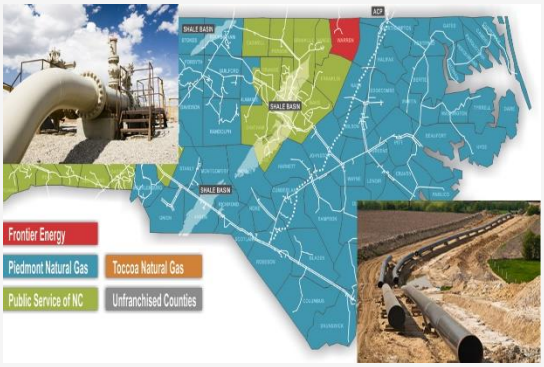
Energy Research – More universities and institutes in the Carolinas are engaged in energy research than in any other one U.S. state. The universities are Appalachian State University, Clemson University, Duke University, North Carolina A&T University, North Carolina State University, UNC Chapel Hill, UNC Charlotte, the University of South Carolina and Wake Forest University and the institutes are the Electric Power Research Institute, RTI International and the Savannah River National Laboratory.

Energy Education and Training – North Carolinas Community Colleges and South Carolina Technical Colleges provide energy education and training to support the industry’s existing workers and provide a source of new skilled craft workers and technologists. Some energy companies use workplace learning and apprenticeship programs to fill their employment pipeline.

Major Utilities – About 100 utilities of various sizes and ownership structures operate in the Carolinas. Duke Energy, the largest power distribution company in the U.S. is headquartered in Charlotte with its subsidiary, Piedmont Natural Gas. Other investors-owned utilities, including South Carolina Electric & Gas and Dominion Resources and their natural gas subsidiaries, Public Service North Carolina and Carolina Gas Transmission. More than 60 electric member corporations operate in the Carolinas and are represented by the North Carolina Electric Membership Corporation and the Electric Cooperatives of South Carolina. Santee Cooper is the largest public power provider in the Carolinas with municipal utilities represented by ElectriCities.

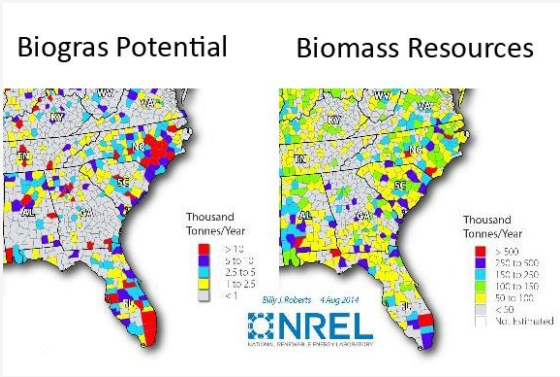
Nuclear Energy – The Carolinas is home to the largest nuclear generating capacity in the U.S. and to the largest concentration of nuclear service companies in the world. A Clemson Study identified a Carolinas nuclear workforce exceeding 23,000 and producing $20 billion annually in value. The Nuclear Energy Institute identifies more than 140 Carolinas companies and organizations with a nuclear interest.

Energy Advanced Manufacturing – The Carolinas is home to one of the largest concentrations of energy manufacturing companies in the world with products including turbines, batteries, solar components, switches, carbon alloys, high-voltage cable, nuclear valves, filters and concrete, smart grid components, lighting, building controls, power electronics, fuel cell components, safety equipment, wind components, smart meters, electric vehicle components and much more.



Natural Gas – The Carolinas is served by 5 local distribution companies and 22 municipal natural gas providers. The largest distributors are Piedmont Natural Gas., Public Service North Carolina and South Carolina Electric & Gas. Natural gas supply from the Texas and Gulf of Mexico production region and from the Appalachian shale region is delivered by Transcontinental Gas Pipe Line Company. New natural gas service will be provided to eastern North Carolina with the completion of the Atlantic Coast Pipeline.

Solar Energy – The Carolinas is the largest solar energy economy in the Eastern United States with more than 2 gigawatts of solar generating capacity. In 2016 North Carolina was 2nd nationally in new installed solar capacity. According to inventories completed by the North Carolina Sustainable Energy Association and the South Carolina Clean Energy Business Alliance, more than 400 companies exist in the Carolinas' solar value chain and employ nearly 7,000.

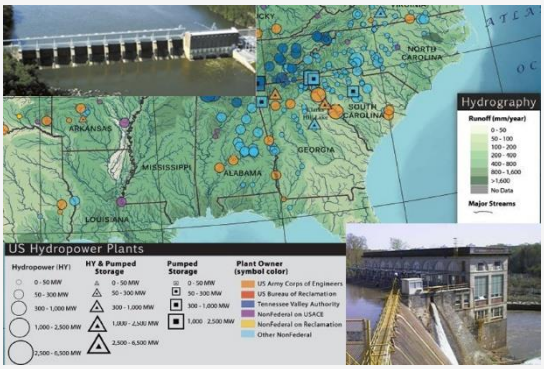


Bio Energy – The Carolinas is home to nearly 200 companies employing about 8800 in the conversion of biological material to energy. These include companies refining biofuels, converting food, agricultural and animal waste to energy and companies combusting municipal waste to producer heat and power.

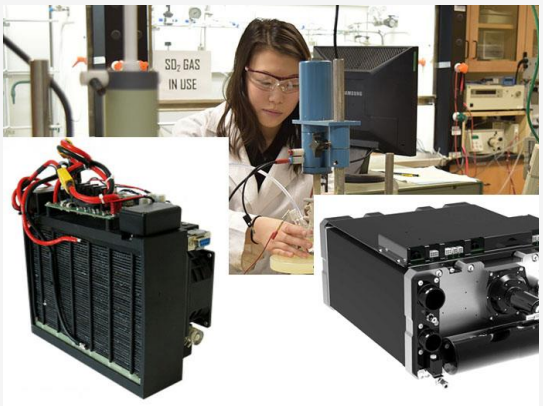
Smart Grid – A 2013 RTI International study of the 16 county Research Triangle Cleantech Cluster identified 96 companies participating in the smart grid supply chain in the region with 17 dedicated solely to smart grid commerce. Technologies include transmission and Distribution, advanced metering, building energy management, electric vehicle charging and information technology. Major smart grid companies in the region include ABB, Black & Veatch, Cisco Systems, Eaton, GE Energy Industrial Solutions, Honeywell/Elster, IBM, Itron, Microsoft, SAS Institute, Schneider Electric, S&C Electric, Siemens and others.

Energy Storage – The Carolinas is home to the second largest cluster of energy storage companies in the U.S., producing a majority of the world's lithium battery, components. More than 130 companies in the energy storage supply chain operate in the Carolinas, employing more 1600. Representative companies include ABB, Albamarle, Alevo, Celgard, Eaton, Parker Hannifin, FMC Lithium, PowerSecure, SGL Carbon and others.

Wind Energy – Clemson's South Carolina Electric & Gas Energy Innovation Center in Charleston houses the world's most-advanced wind-turbine drive train testing facility and is part of an emerging Carolinas wind energy industry supported by the Southeastern Wind Coalition. Avangrid Renewables built a 104 turbine 208 MW wind farm in northeast North Carolina.



Hydro Power – Electric power generated by hydro-electric dams in the Carolinas represents about two thirds of the Carolinas renewable energy. 5,800 powered and un-powered dams exist in the Carolinas and those that are powered have a total generating capacity of more than 9 gigawatts. About 30 companies Carolina companies are in the hydro supply chain, employing more than 500. Hydro operators include Duke Energy, South Carolina Electric & Gas, Santee Cooper, Andritz Hdro, Cube Hydro, Lockhart Power, EDF and others.



Fuel Cells -Innovation in the fuel cell sector is led by the South Carolina Hydrogen & Fuel Cell Alliance, a Public-private collaborative with research members including the University of South Carolina, Savannah River National Lab, Clemson University and South Carolina State University. Government entities, in particular, the U.S. Department of Energy has funded SCHFCA for a hydrogen education program for state and local officials. South Carolina funded more than $12 million for hydrogen fuel cell development, while other non-state entities, including private sources have invested nearly $115 million into the development of the technology.