R&D in renewable energy and energy efficiency is an emerging growth sector in the Raleigh market.

Raleigh has emerged as a hub for companies developing the advanced, environmentally sustainable technologies categorized as cleantech. The Research Triangle Region Cleantech Cluster (RTCC) is comprised of award-winning professionals from more than 500 companies driving the area's economic and technological growth in smart grid, energy efficiency, advanced transportation and alternative energy. At N.C. State, **the 1,075-acre** Centennial Campus **facilitates collaboration between faculty engineers and researchers, government scientists, top student talent and leading cleantech companies.** Research support from Duke and UNC-Chapel Hill, as well as from public and private initiatives within the RTP, combine to fuel the local Raleigh market with intellectual capital in a wide range of cleantech disciplines.

In smart grid innovation, Raleigh is a global leader. More than 3,000 people are directly engaged in the development of smart grid technologies. Power technology companies like ABB and Siemens, together with IBM, Cisco and SAS are playing leading roles in building smart grid components, software and data management systems, working locally with Duke Energy in the design, engineering and deployment of power network solutions. Smart grid operations and service in Raleigh rely on 50 different companies across every segment of the power and utility infrastructure, including critical areas of data integration, power distribution, building energy management, and system-wide intelligence. At the Raleigh-based Future Renewable Electric Energy Delivery and Management (FREEDM) Systems Center, pioneering work in emerging technologies, such as linking renewable energy resources to the power grid, helps to keep Raleigh at the forefront of this

vitally important industry.

We wanted a community where there's a culture of innovation."

– David Campbell, Allscripts

R&D in renewable energy and energy efficiency is also an emerging growth sector in the Raleigh market. Central and eastern North Carolina's farmlands and forests provides easy access to raw materials for bio-fuels research, testing and production. The North Carolina Solar Center, based in Raleigh at the College of Engineering at N.C. State, is a nationally-recognized resource for clean energy technology. The N.C. Solar Center also developed a Clean Transportation Program to increase the use of alternative fuels and advanced transportation technologies, helping to diversify fuel supplies and support cleaner, more vibrant economies through enhanced energy security. In 2012, Raleigh also became a market for offshore wind energy innovation with the arrival of China's Ming Yang Wind Power Group, a leading global producer of turbine technologies.

Advanced transportation is yet another area where Raleigh is leading in clean technologies. The Advanced Transportation Energy Center (ATEC) at NC State is a global resource linking industry and academic researchers to advance the innovation and adoption of plug-in hybrid and electric vehicles. ATEC serves as a valuable education and research initiative in collaboration with an impressive list of worldwide commercial partners including Eaton, GE and Toyota.

Energy intelligence has also been embraced by the public sector. In 2007, the City of Raleigh launched a program designed to convert its municipal fleet to vehicles powered by bio-fuels, flex fuels, hybrid systems, clean diesel and electricity. In 2009, Progress Energy partnered with the city to dramatically enhance the environmental, cultural and economic sustainability of the city's transportation infrastructure. By early 2012, 23 public vehicle charging stations had been installed around Raleigh in addition to six reserved exclusively for the city fleet.