

Renewable Energies Manufacturing in Rutherford County, NC



Rutherford County is committed to growing and recruiting manufacturers in the renewable energies sectors. Existing industry is poised to expand into the new market with increased volume of both plastic and fabricated metal products. Also, with a strong database of available sites and buildings, Rutherford County is aggressively recruiting renewable energies manufacturers, so together the needs of this growing market can be met.

State and Local Focus

On August 7, 2009, Governor Beverly Perdue signed House Bill 1481 to strengthen state energy policy leadership, a significant step forward in her JobsNOW Green Economy Plan. The action, along with the announcement of 14 Green Business Fund grants, is part of a three pronged strategy to make North Carolina a leader in green economy jobs by strengthening state leadership in energy policy, making smart investments to create jobs and foster innovation and providing green-collar workforce training.

"Strong leadership and smart investments are essential to laying a foundation for North Carolina to create green jobs, support green innovation and promote a sustainable future for our state's economy and environment." - Gov. Beverly Perdue

Rutherford County is working with industry to help companies quickly respond to this new market. In March 2009, a symposium was held for all existing industry to examine and look at new market opportunities. The primary focus has been in the areas of plastics and metal fabrication (Table 3, page 2).

New Green Product Development

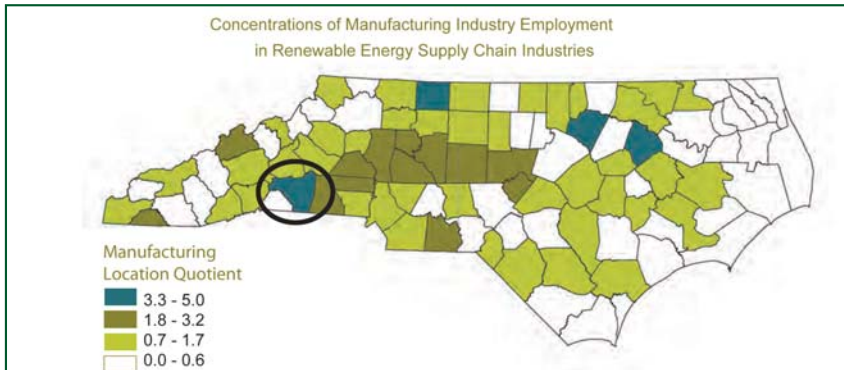
3TEX is an example of a company located in Rutherford County that is pursuing new alternative energy markets. Several new products being developed include a 3D Fiber System (Table 1) for use on wind blades and corrosion solutions for use on scrub towers at coal generated power plants. This new material does not rust or corrode.

3TEX 3D Fiber Systems for Wind Blades

- RapidRoot3D™ Preforms** - eGlass up to .3in (8mm) thick. Custom Woven. Formed to Specification. Build Root Fast, and Infuse Faster. 20 plies or less to get 4in (100mm) thick.
- 3TEX - UniGirder™ Spar cap.** Entire spar cap woven in single layer. Glass or Carbon, 90% Unidirectional. Very Fast, Very Easy.
- 3GlassBillet™ 20-40mm/ply** NO Delamination. Allows Threading & Machining. Features Hard Points.
- ZPlex® Conformal Total Sandwich Preform** Compound Curves and NO skin/core bond line.
- FilletBraid™ - Shaped Glass Gap/Join/Corner Preforms** 100% glass. VARTM. Wet Lay Joints.

Table 1

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While 58 county economies in North Carolina have some degree of specialization in the manufacturing industries of the renewable energy supply chain, **Rutherford County is among the leaders** as illustrated. New jobs from manufacturing renewable energy components will be of greatest benefit to counties where a larger-than-average portion of local employment is found in industries with the technical potential, as defined by the North American Industry Classification System, to manufacture products for renewable energy markets.

Table 2 | Spring 2009 | North Carolina Economic Developer's Guide to the Renewable Energy Industries

A full set of 9m blades with 3TEX single ply spar caps were heavily instrumented and have been power tested at the USDA Agriculture Research Service (ARS) center in Bushland, Texas.



Go Green Here



Incentives

- NC Energy Investment Revolving Loan Fund: \$18 million in federal recovery monies to provide low and no-interest loans to finance energy-saving projects at businesses, local governments, non-profits, state agencies, community colleges, universities and public schools. The loans will be awarded for up to \$1 million.
- NC Green Business Fund: \$10 million in federal recovery funds to award competitive grants to North Carolina businesses and organizations with innovative projects in biofuels, green construction, environmentally friendly technology and renewable energy products.
- NC Green Workforce: JobsNOW initiative will provide nearly \$7 million in federal recovery funds to meet the training and workforce needs of the emerging green economy through the community college system.
- Federal recovery funds include \$12 million to support energy savings and renewable energy initiatives in small businesses and industries.
- Renewable Energy Tax Credit (Corporate): Tax credit equal to 35% of the cost of eligible renewable energy property constructed, purchased or leased by a taxpayer and placed into service in North Carolina during the taxable year.
- Property Tax Abatement for Solar Electric Systems: Exempts 80% of the appraised value of a "solar energy electric system" (also known as a photovoltaic, or PV, system) from property tax.
- Active Solar Heating and Cooling Systems Exemption: Active solar heating and cooling systems may not be assessed at more than the value of a conventional system for property tax purposes. Systems placed on residential, commercial and industrial property are eligible for this exclusion.
- Duke-Energy Non Residential Energy Efficiency Rebate Program: Duke Energy's Smart Saver™ Incentive program offers rebates to non-residential customers to install energy efficient equipment in their facilities.

Links to all incentives listed can be found at: www.rutherfordnccdc.com/Renewable-Energies-Manufacturing.html

Workforce & Training

A key partner for Rutherford County is the Appalachian State University Energy Center. Several key programs are available through the Energy Center, such as:

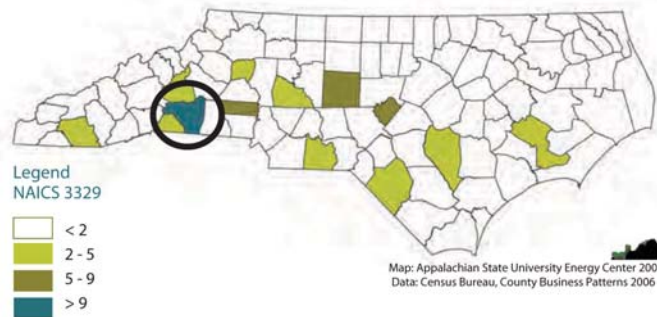
- Bachelor and Masters-Level degrees in Renewable Energy Technology
- Appalachian State University Collaborative Biodiesel Project
- Western North Carolina Renewable Energy Initiative and Workshops

(www.energy.appstate.edu)



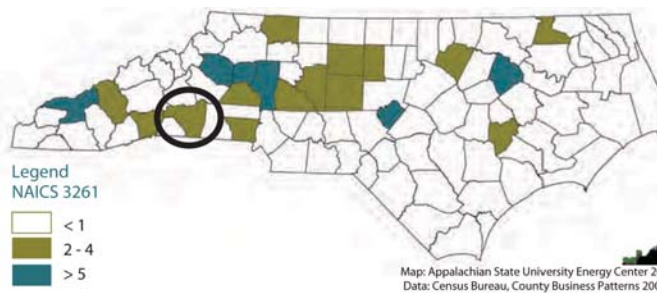
Isothermal Community College provides workforce training through the Customized Training Program. This program is designed to react quickly to the needs of businesses and to respect the confidential nature of proprietary processes and information within those businesses. www.isothermal.edu

In 2009, Appalachian State University's Energy Center conducted a study that showed which counties have the largest number of manufacturers per sector. Below are the corresponding graphs. Rutherford County is circled.



Fabricated Metal Products

Metal products, especially bearings, are essential in all mechanically driven electricity generating machinery, including turbines powered by wind or steam from biomass combustion. A new \$17 million Houston, TX facility will make wind turbine bearings from 8 feet to 14 feet in diameter. Several county economies have high concentration of bearing manufacturer employment, **especially Rutherford County.**



Plastic Products

Plastics are a major component throughout the supply chain of renewable energy technologies, including major components such as the nacelle case and a large portion of turbine blades for wind turbines, as well as the rear surface that holds together the semiconductor cells in the PV module. Over 20 counties have some specialization in plastics, **including Rutherford County.**



Foundries

Foundries produce key structural components for wind turbines, including the rotor hub, blade extenders, nacelle frame and tower flange. Components used in wind turbines are both remarkably large and extremely heavy, have highly engineered requirements such as high-impact strength in extreme low temperatures, and are of limited availability as few facilities have production capabilities. Only three counties have more than two foundries, **particularly Rutherford County.**

Table 3