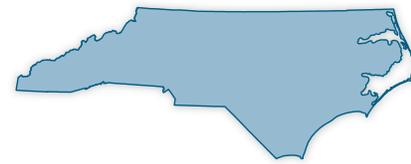




Department of Energy Recovery Act State Memos

North Carolina



For questions about DOE's Recovery Act activities, please contact the DOE Recovery Act Clearinghouse:
1-888-DOE-RCVY (888-363-7289), Monday through Friday, 9 a.m. to 7 p.m. Eastern Time
<https://recoveryclearinghouse.energy.gov/contactUs.htm>.

All numbers and projects listed as of June 1, 2010

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American Recovery and Reinvestment Act



U.S. DEPARTMENT OF ENERGY • NORTH CAROLINA RECOVERY ACT SNAPSHOT

Funding for selected DOE projects: **\$812.6 million**

DOE Recovery Act projects in North Carolina: **64**

Clean energy tax credits and grants: **10**

For total Recovery Act jobs numbers in North Carolina go to www.recovery.gov

The **American Recovery & Reinvestment Act (ARRA)** is making a meaningful down payment on the nation's energy and environmental future. The Recovery Act investments in North Carolina are supporting a broad range of clean energy projects from energy efficiency and the smart grid to solar power and biofuels. Through these investments, North Carolina's businesses, universities, non-profits, and local governments are creating quality jobs today and positioning North Carolina to play an important role in the new energy economy of the future.

EXAMPLES OF NORTH CAROLINA FORMULA GRANTS

Program	State Energy Program	Weatherization Assistance Program	Energy Efficiency Conservation Block Grants	Energy Efficiency Appliance Rebate Program
Award (in millions)	\$76	\$132	\$58.3	\$8.8
	The North Carolina Department of Commerce has received \$76 million in State Energy Program funds to invest in state-level energy efficiency and renewable energy priorities.	The North Carolina Department of Commerce has received \$132 million in Weatherization Assistance Program funds to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions, and saving money for North Carolina's low-income families. Over the course of the Recovery Act, North Carolina expects to weatherize approximately 12,250 homes. The program also includes workforce training and education as part of the state's efforts to develop a green workforce.	Thirty-four communities in North Carolina received a total of \$58.3 million for Energy Efficiency and Conservation Block Grants (EECBG) to develop, promote, implement, and manage local energy efficiency programs.	North Carolina has received \$8.8 million for the Energy Efficient Appliance Rebate Program, which offers consumer rebates for purchasing certain ENERGY STAR® appliances. These energy efficient appliances reduce energy use and save money for families, while helping the environment and supporting the local economy.

EXAMPLES OF NORTH CAROLINA COMPETITIVE GRANTS AND TAX CREDITS

Award	\$221.8 million	\$200 million	\$49.3 million	\$39.1 million	\$17.5 million
	Duke Energy Business Services LLC , in Charlotte, was awarded \$200 million through the Smart Grid Investment Grant Program , and an additional \$21.8 million for smart grid demonstration projects.	Progress Energy Service Company was awarded \$200 million through the Smart Grid Investment Grant Program to upgrade the electrical grid, enhance grid efficiency and reliability, and install over 160,000 smart meters for the utility's customers.	Celgard in Charlotte was awarded \$49.3 million to expand its manufacturing of parts for batteries used in electric vehicles.	Cree, Inc. in Durham was awarded a clean energy manufacturing tax credit of \$39.1 million to purchase new equipment, add capacity and lower the production costs of high-efficiency LED lights.	The Energy Frontier Research Center in Chapel Hill received \$17.5 million to accelerate scientific breakthroughs needed to build the clean energy economy.

Funding Allocation Table (Figure 1)

Total dollar amounts in this document are accurate as of June 1, 2010. Please note that Recovery Act Programs are ongoing and the dollar amounts are subject to change. Recipient locations are based on project sites rather than recipients' headquarters locations.

Recovery Act Pillar	Flagship Program Names & Funding Type ¹	Number of Selections	Selected Amount (in millions) ²
Energy Efficiency	<i>Weatherization Assistance Program (F)</i>	1	\$132.0
	<i>State Energy Program (F)</i>	1	\$76.0
	<i>Energy Efficiency and Conservation Block Grant (F)</i>	34	\$58.3
	<i>BetterBuildings (CM)</i>	1	\$5.0
	<i>Energy Efficient Appliance Rebate (F)</i>	1	\$8.8
	<i>Building Energy Efficiency (CM)</i>	2	\$1.8
	<i>Industrial Energy Efficiency (CM)</i>	1	\$0.1
	<i>Additional Programs (CM & C)</i>	1	\$1.3
	TOTAL Energy Efficiency	42	\$283.3
Renewable Energy	<i>Solar (CM)</i>	1	\$0.9
	<i>Wind (CM)</i>	1	\$0.7
	<i>Additional Programs (F & CM)</i>	1	\$13.0
	TOTAL Renewable Energy	3	\$14.6
Electric Grid	<i>Smart Grid Investment and Demonstrations Project (CM)³</i>	4	\$425.7
	<i>State and Local Energy Assurance and Regulatory Assistance (F)</i>	5	\$2.6
	<i>Smart Grid Workforce Training (CM)³</i>	1	\$2.5
	TOTAL Electric Grid	10	\$430.8
Transportation	<i>Advanced Battery Manufacturing (CM)</i>	1	\$49.3
	<i>Clean Cities Alternative Fuel and Vehicles Program (CM)</i>	1	\$12.0
	TOTAL Transportation	2	\$61.3
Carbon Capture and Storage	<i>CCS Projects (CM)</i>	1	\$1.0
	<i>Research and Training (CM)</i>	2	\$0.6
	TOTAL Carbon Capture and Storage	3	\$1.6
Science and Innovation	<i>Advanced Research Projects Agency - Energy (ARPA-E) (CM)</i>	1	\$3.1
	<i>Energy Frontier Research Centers (CM)</i>	1	\$17.5
	<i>Small Business Research (SBIR/STTR) (CM)</i>	1	\$0.1
	<i>Additional Programs</i>	1	\$0.3
	TOTAL Science and Innovation	4	\$21.0
TOTAL - DOE Programs⁴		64	\$812.6
Tax Credits/ Payments ⁵	<i>Payments for Renewable Energy Generation in Lieu of Tax Credits (1603)</i>	9	\$0.8
	<i>Clean Energy Manufacturing Tax Credits (48C)</i>	1	\$39.1
	TOTAL Tax Incentives	10	\$39.9
TOTAL - DOE/Treasury + DOE		74	\$852.5
¹ F=Formula Grant, CM=Competitive Grant, C=Contract			
² "Selected" indicates DOE has selected a potential funding recipient, which begins the process of negotiating an agreement. This does not necessarily indicate that a final agreement has been reached.			
³ Projects may cross state boundaries, signifies HQ location.			
⁴ Total does not include administrative funds.			
⁵ Jointly administered by DOE and the U.S. Department of Treasury.			

ENERGY EFFICIENCY – 42 projects totaling \$283.3 million

Helping millions of American families cut utility bills by making homes and appliances more energy efficient, expanding the home efficiency industry in sales and manufacturing. For more information, visit <http://www.energy.gov/recovery/energyefficiency.htm>.

Award(s): \$132 million, Weatherization Assistance Program (WAP)

Location: Statewide

The North Carolina Department of Commerce received \$132 million in Weatherization Assistance Program funds to increase existing weatherization efforts in the state, creating jobs, reducing carbon emissions and saving money for North Carolina's low-income families. Over the course of the Recovery Act, North Carolina's goal is to weatherize approximately 12,250 homes. The program also includes workforce training and education as part of the state's efforts to develop a green workforce.

Award(s): \$76 million, State Energy Program (SEP)

Location: Statewide

The North Carolina Department of Commerce received \$76 million in State Energy Program funds to invest in state-level energy efficiency and renewable energy priorities. North Carolina is establishing revolving loan programs, competitive grant programs and training programs designed to spur investment in energy efficiency and renewable energy technologies. A revolving loan fund is being created to provide zero- and low-interest loans to businesses, non-profit organizations, local and state governments and schools and universities. Competitive grants are also being made available to businesses and organizations with innovative clean energy projects. The state is developing a multi-level training and workforce program through its community college and university systems to meet the needs of an emerging green economy.

Award(s): 34 totaling \$58.3 million, Energy Efficiency and Conservation Block Grant Program (EECBG)

Location: Statewide

Recipients: Asheville, Buncombe County, Burlington, Town of Cary, Town of Chapel Hill, Charlotte, Concord, Cumberland County, Davidson County, Durham, Eastern Band of Cherokee Indians of North Carolina, Fayetteville, Gaston County, Gastonia, Goldsboro, Greensboro, Greenville, Hickory, High Point, Town of Huntersville, Iredell County, Jacksonville, Johnston County, Kannapolis, Mecklenburg County, North Carolina State Energy Office, Raleigh, Randolph County, Rocky Mount, Union County, Wake County, Wilmington, Wilson, Winston-Salem

Thirty-four communities in North Carolina received a total of \$58.3 million for the Energy Efficiency and Conservation Block Grants (EECBG) to develop, promote, implement and manage local energy efficiency programs.

This project assists states, U.S. territories, Indian tribes, counties and cities to develop, promote, implement and manage localized energy efficiency programs through individual program grants. The project funds programs which reduce fossil fuel emissions in a manner that is environmentally sustainable, maximizes cost savings, reduces the total energy use of eligible entities and improves energy efficiency in the transportation, building and other appropriate sectors. Examples of EECBGs include:

- **Winston-Salem - \$2.3 million**

Winston-Salem received \$2.3 million to fund eight EECBG projects creating 200 jobs and saving the city \$1.4 million in energy costs over a 10-year period. With funding, the city is creating a streetcar system to complement other mass transit proposals for Winston-Salem and the broader Triad region. The city estimates 5,800 riders each day, or 2.1 million riders per year, once the system is completed in 2010.

- **Town of Cary - \$1.2 million**

The Town of Cary received \$1.2 million to hire a sustainability manager, conduct energy-efficiency building audits, retrofits, purchase alternative-fuel vehicles and begin an LED street light pilot project.

- **City of Gastonia - \$706,000**

The City of Gastonia received \$706,000 to create a comprehensive energy strategy. The city's strategy focuses on energy efficiency retrofits, traffic signals and street lighting and development and implementation of transportation programs. Projects include lighting and equipment upgrades in municipal buildings, water and wastewater treatment energy monitoring, conversion to LED-lighted pedestrian signal heads, the purchase of electric vehicles for park and recreation and police use and route planning software for utility vehicles. These EECBG supported projects substantially impact the local economy and energy use, saving an estimated 3,287,489 kWh / year and reducing GHG Emissions (carbon dioxide Equivalents) by 2,077,153 annually. The route planning and data collection project, combined with the purchase of electric vehicles, is estimated to save 31,650 gallons of fuel over five years.

Award(s): \$8.8 million, Energy Efficient Appliance Rebate Programs

Location: Statewide

North Carolina received \$8.8 million for the Energy Efficient Appliance Rebate Program, which offers consumer rebates for purchasing certain ENERGY STAR® appliances. These energy efficient appliances reduce energy use and save money for families, while supporting the local economy. The Appliance Replacement and Rebate Program allow consumers to replace older refrigerators, freezers, washing machines and dishwashers with ENERGY STAR appliances.

Award(s): \$5 million, BetterBuildings

Location: Greensboro

Greensboro received \$5 million for BetterBuildings. This program dramatically expands Greensboro's capacity to accelerate comprehensive, community-scale energy efficiency and job creation in the economically distressed area of East Greensboro. The project partners with a coalition of nearly 50 public and private sector organizations and is planning significant outreach through area churches and community organizations.

Award(s): \$1,000, Buildings and Appliance Market Transformation

Location: Wilkesboro

Lowe's Home Centers, Inc., in Wilkesboro received \$1,000 for Buildings and Appliance Market Transformation. The Buildings and Appliance Market Transformation project expands building codes, accelerates the pace of Appliance Standard test procedure development and improves the efficiency of commercial buildings' operations by training building operators and commissioning agents.

Award(s): \$1.3 million, Ground Source Heat Pumps

Location: Raleigh

The City of Raleigh received \$1.3 million for Ground Source Heat Pumps to retrofit a waste processing center with a GHP hot water loop as well as heating / cooling system.

Award(s): \$140,000, Industrial Assessment Centers and Plant Best Practices

Location: Raleigh

The Industrial Assessment Center at North Carolina State University in Raleigh received \$140,000 for the Industrial Assessment Centers and Plant Best Practices program to help the center provide manufacturers with no-cost energy assessments. This project serves as a training ground for a new generation of energy-savvy engineers.

Award(s): \$1.8 million, Solid State Lighting

Location: Durham

Cree, Inc., in Durham received \$1.8 million for Solid State Lighting. The company proposed several novel technologies for a LED based MR16 direct replacement lamp. These proposed technologies include a new chip configuration, a multi-colored red phosphor blend, a phosphor configuration for heat dissipation and a new optical lens component.

RENEWABLE ENERGY – 13 projects totaling \$54.5 million

Developing the clean renewable resources in order to double our supply of renewable energy and boost domestic renewable manufacturing capacity. For more information, visit <http://www.energy.gov/recovery/renewableenergy.htm>.

Award(s): 9 payments totaling \$781,000 from DOE / Treasury, 1603 Payments for Renewable Energy Generation

Location: Statewide

*For current number of 1603 awards, see the weekly update at <http://www.treas.gov/recovery/1603.shtml>

North Carolina received nine 1603 Payments for Renewable Energy Generation totaling \$781,000, which include solar and wind projects.

- **The Hartz Group, Secaucus - \$636,000**
The Hartz Group in Secaucus received \$636,000 for a solar project.
- **1529 Properties, LLC, Garner - \$114,000**
1529 Properties, LLC, in Garner received \$114,000 for a solar project.
- **SanDan Farm, McLeansville - \$59,000**
SanDan Farm in McLeansville received \$59,000 for a solar project.
- **Bonville Construction, West End - \$30,000**
Bonville Construction in West End received \$30,000 for a solar project.
- **101 South Main, LLC, Fuquay Varina - \$23,000**
101 South Main, LLC, in Fuquay Varina received \$23,000 for a solar project.

- **Innovative Solar Solutions, Inc., Charlotte - \$6,000**
Innovative Solar Solutions, Inc., in Charlotte received \$6,000 for a solar project.
- **Waterway Outdoor, LLC, Bolivia - \$6,000**
Waterway Outdoor, LLC, in Bolivia received \$6,000 for a solar project.
- **Linda Cole, Gastonia - \$5,000**
Linda Cole in Gastonia received \$5,000 for a solar project.
- **Lem Rachels ABS Lem's Auto Sales, Shelby - \$3,000**
Lem Rachels ABS Lem's Auto Sales in Shelby received \$3,000 for a wind project.

Award(s): \$39.1 million from DOE / Treasury, Clean Energy Manufacturing Tax Credit (48C)

Location: Durham

Cree, Inc., in Durham received a clean energy manufacturing tax credit of \$39.1 million to purchase new equipment, add capacity and lower the production costs of high-efficiency LED lights.

Award(s): \$910,000, High-Penetration Solar Deployment

Location: Raleigh

North Carolina State University's North Carolina Solar Center (NCSC) received \$910,000 for High-Penetration Solar Deployment. NCSC's Mid-Atlantic Joint Excellence in Solar Training Consortia (MAJESTC) project is expanding to include solar installation professionals as well as local institution instructors. NCSC is addressing solar instructor professional development by providing hands on training in the region, developing standardized curricula and providing online reference tools for LEI's. The MAJESTC project also implements workshops and face-to-face conferences with trainers, community colleges and vocational and technical high schools to provide solar industry information and best practices.

Award(s): \$13 million, Hydroelectric Facility Modernization

Location: Robbinsville

Alcoa, Inc., in Robbinsville received \$13 million for Hydroelectric Facility Modernization to replace four 90-year-old turbines with high-efficiency stainless steel turbines, generators and transformers. These turbines provide an additional 22 MW of generating capacity at the plant, increasing annual generation by 23 percent. By replacing the water-cooled transformers, Alcoa is reducing the risk for oil spills and removed lead and asbestos from the generating units.

Award(s): \$742,000, Wind Energy Technology R&D and Testing

Location: Shelby

PGG Industries, Inc., in Shelby received \$742,000 for Wind Energy Technology R&D and Testing. Wind projects address market and deployment challenges including wind turbine research, transmission analysis, planning and assessments. This particular project focuses on wind blade manufacturing innovation.

MODERNIZING THE ELECTRIC GRID – 10 projects totaling \$430.8 million

Harnessing clean energy sources and integrating them onto a modernized electric grid, while giving consumers better choices and more control over their energy use. For more information, visit <http://www.energy.gov/recovery/smartgrid.htm>.

Award(s): 4 totaling \$1.7 million, Enhancing State and Local Governments' Energy Assurance

Location: Raleigh, Asheville, Wilmington

North Carolina received \$1.7 million to focus on building regional energy assurance capabilities by enhancing inter- and intra-state coordination and cooperation during energy emergencies. This project funds states to update and develop State Energy Assurance Plans that incorporate new energy portfolios such as wind, renewables, biofuels, etc. This program also funds cities updating and developing Energy Assurance Plans within local areas. The two sets of funding are being used to hire or retrain staff, building in-house expertise in the areas of Smart Grids, critical energy infrastructure interdependencies and cyber-security.

- **North Carolina Department of Commerce, Raleigh - \$1 million**
The North Carolina Department of Commerce in Raleigh received \$1 million for Enhancing State and Local Governments' Energy Assurance.
- **City of Asheville - \$210,000**
The City of Asheville received \$210,000 for Enhancing State and Local Governments' Energy Assurance.
- **City of Wilmington - \$200,000**
The City of Wilmington received \$200,000 for Enhancing State and Local Governments' Energy Assurance.
- **City of Raleigh - \$200,000**
The City of Raleigh received \$200,000 for Enhancing State and Local Governments' Energy Assurance.

Award(s): 3 totaling \$404 million, Smart Grid Investment Grant Program (EISA 1306)

Location: Raleigh, Charlotte

- **Progress Energy Service Company, Raleigh - \$200 million**
Progress Energy Service Company received \$200 million through the Smart Grid Investment Grant Program to upgrade the electrical grid, enhance grid efficiency and reliability and install over 160,000 smart meters for the utility's customers.
- **Duke Energy Business Services, LLC, Charlotte - \$200 million**
Duke Energy Business Services, LLC, in Charlotte received \$200 million through the Smart Grid Investment Grant Program.
- **Duke Energy Business Carolinas, LLC, Charlotte - \$4 million**
Duke Energy Business Services, LLC, in Charlotte received \$4 million through the Smart Grid Investment Grant Program.

Award(s): \$21.8 million, Smart Grid Regional and Energy Storage Demonstration Project (EISA 1304)

Location: Charlotte

Duke Energy Business Services, LLC received \$21.8 million for Smart Grid demonstration projects.

Award(s): \$2.5 million, Smart Grid Workforce Training

Location: Raleigh

North Carolina State University in Raleigh received \$2.5 million for Smart Grid Workforce Training. This project is developing and implementing an accelerated, Master of Engineering degree in Electric Power Systems. The program encompasses the engineering, management and professional skills needed in the industry. This includes both core power engineering topics as well as new cross-disciplinary technical topics relevant to the clean-energy Smart Grid. The degree is suitable for new graduates and experienced professionals.

Award(s): \$985,000, State Assistance on Electricity Policies

Location: Raleigh

North Carolina Department of Commerce received \$985,000 for State Assistance on Electricity Policies. This project funds States and their Public Utility Commissions (PUCs) to hire staff trained to facilitate the review of time-sensitive requests approving electric utility expenditures undertaken as part of the Recovery Act.

TRANSPORTATION – 2 projects totaling \$61.3 million

Investing in a new generation of advanced fuels and vehicles to reduce our dependence on foreign oil and revitalize domestic manufacturing. For more information, visit <http://www.energy.gov/recovery/vehicles.htm>.

Award(s): \$49.3 million, Advanced Battery Manufacturing

Location: Charlotte

Celgard in Charlotte received \$49.3 million to expand its manufacturing of electric vehicle battery parts.

Award(s): \$12 million, Clean Cities Alternative Fuel and Vehicles (AFV) Grant Program

Location: Durham

The Executive Office of the State of North Carolina in Durham received \$12 million for the Clean Cities Alternative Fuel and Vehicles (AFV) Grant Program. The project includes vehicles and fueling infrastructure for electric, hybrid-electric, compressed natural gas, propane, E85 and biodiesel fuels. The project includes 45 E85 and B20 stations, eight propane stations and 132 electric vehicle recharging sites. New vehicles slated for deployment include 55 CNG vehicles, 363 propane vehicles, 89 hybrid electric vehicles and 56 neighborhood electric vehicles. It is estimated the initiative will help displace 724,000 gallons of petroleum annually. The initiative is also supported by the North Carolina and South Carolina State Energy Offices, the North Carolina Biofuels Center, the North Carolina Department of Environment and Natural Resources and the South Carolina Department of Health and Environmental Control.

CARBON CAPTURE & STORAGE – 3 projects totaling \$1.6 million

Developing clean coal technologies so we can utilize America's coal resources sustainably. For more information, visit <http://www.energy.gov/recovery/ccs.htm>.

Award(s): 2 totaling \$599,000, Geological Sequestration Training and Research Grant Program

Location: Durham

Duke University in Durham received \$599,000 for the Geological Sequestration Training and Research Grant Program. These funds are being used for a geologic sequestration training and research project that provides opportunities for undergraduate and graduate students to develop skills in implementation of carbon capture and storage technologies. Duke is attempting to use carbonsheds, a concept developed as a framework for the optimization of carbon dioxide transportation. The project supports at least two graduate students.

Award(s): \$984,000, Industrial Carbon Capture and Storage Applications

Location: Research Triangle Park

Research Triangle Institute in Research Triangle Park received \$984,000 for Industrial Carbon Capture and Storage Applications. This project involves the conversion of flue gas carbon dioxide to Substitute Natural Gas (SNG). This is done with ethylene plant hydrogen byproduct stream using a Nickel-based catalyst.

SCIENCE AND INNOVATION – 4 projects totaling \$21 million

Renewing our commitment to science and innovation to ensure global competitiveness in the future. For more information, visit <http://www.energy.gov/recovery/innovation.htm>.

Award(s): \$3.1 million, Advanced Research Projects Agency – Energy (ARPA-E)

Location: Research Triangle Park

The Research Triangle Institute in Research Triangle Park received \$3.1 million for Advanced Research Projects Agency – Energy (ARPA-E) to develop a biomass fuel. This fuel will serve as an alternative energy source and can be used as a direct replacement for petroleum in our existing transportation infrastructure. The project uses solvents which exploit a new type of reversible chemical reaction with carbon dioxide. This approach could require 40 percent less energy compared to current processes.

Award(s): \$321,000, Computational Partnerships (SciDAC-e)

Location: Chapel Hill

University of North Carolina at Chapel Hill received \$321,000 for Computational Partnerships (SciDAC-e). This project provides funds for a one-time stimulus of research efforts in applied mathematics and computer science to establish the computational foundation needed to develop novel, renewable and / or ecologically friendly energy sources and Smart Grids.

Award(s): \$17.5 million, Energy Frontier Research Centers

Location: Chapel Hill

The Energy Frontier Research Center in Chapel Hill received \$17.5 million to synthesize new molecular catalysts and light absorbers and integrate them into nanoscale architectures for improved generation of fuels and electricity from sunlight.

Award(s): \$139,000, Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Round 1

Location: Pittsboro

Piedmont Biofuels Industrial, LLC, in Pittsboro received \$139,000 for SBIR / STTR to develop an enzymatically catalyzed biodiesel process, allowing the use of low quality and waste feedstocks, eliminating process waste water and dramatically improving glycerin quality.

ENERGYEMPOWERS.GOV

Recovery Act Success Stories

Energy Empowers is a U.S. Department of Energy clean energy information service. Our team produces stories featuring the people and businesses that are fueling the energy transformation and economic recovery in America. For more stories from your state, go to energyempowers.gov/NorthCarolina



SHELBY

PPG and MAG team up for wind turbine blade research

For more than 15 years, PPG Industries has been supplying fiberglass to the wind turbine production industry. Now, with more than \$700,000 in Recovery Act funds, PPG and partner MAG Industrial Automation Systems are researching materials and processes that could result in stronger and more reliable wind blades.

“Current materials need to be optimized to meet the demanding performance needs of today’s largest wind blade designs,” says Cheryl Richards, PPG global marketing manager in wind energy. According to Cheryl, wind turbine blades are produced by combining dry fiber glass fabrics with a strong resin to form a composite. This method is widely used in production, but may lead to inconsistencies during fabrication. Inconsistencies could lead to field failures and costly repairs.

Another production method uses a composite of fiber and resin called a prepreg, which can yield stronger turbine blades than those produced with dry fiber glass fabrics. These products are more expensive to produce initially, but may ultimately offer a higher degree of performance. They are also compatible with automated production processes, which could help alleviate these high costs. “Everything is about reducing the cost of renewable energy,” says Cheryl. “Lower wind energy costs benefit everyone from consumers to the power

“We’re defining the technology that exists and where it needs to go in the future,” - Cheryl Richards, PPG global marketing manager in wind energy

producers and increases the demand for the products we have to offer.”

PPG and MAG are looking to find a way to combine automated production technology with the higher performance of prepreg fiber glass and resin systems. If successful, this could reduce costs, increase productivity levels and reduce blade to blade variability. “When you reduce variability you will reduce the likelihood for premature failure,” Cheryl says.

Right now, the project is in Phase I, where PPG and MAG are conducting research and data analysis. A database has been developed to catalog the performance of different combinations of materials, and will help identify the best combinations for the most reasonable cost.

“We’re defining the technology that exists and where it needs to go in the future,” Cheryl says.

Although PPG’s headquarters are in Pittsburgh, and MAG is in Erlanger, Ky., most of the research is being done at PPG’s campus in Shelby, N.C. The Shelby campus houses PPG fiberglass production with wind blade materials research and development just a few buildings away.

CHARLOTTE

Queen City awarded Retrofit Ramp-Up funding

Charlotte, N.C., was awarded funding for energy projects in June, and city, Mecklenburg County, local business, nonprofits and U.S. Department of Energy (DOE) leaders gathered recently at the Clean Energy Roadshow’s 15th stop to highlight a \$400,000 award the city received from the DOE’s Retrofit Ramp-Up program as part of the American Recovery and Reinvestment Act.

The money comes to Charlotte as a grant from the Southeast Energy Efficiency Alliance, an Atlanta-based group that is distributing \$20 million in retrofit funding to municipalities in eight states. Charlotte officials plan to use the money to develop ways to expand energy-efficiency in area homes and businesses, which helps save on energy costs. Charlotte’s energy and sustainability manager, Robert Phocas, says, “It is my vision for Charlotte to become the energy capital of the U.S.”

Gil Sperling, a senior adviser to Assistant Secretary Cathy Zoi in the Office of Energy Efficiency and Renewable Energy at the DOE, says energy efficiency is one of the smartest ways to help the country succeed in meeting its energy needs.

“We import way too much oil,” he says. “Clearly, we need to use our energy resources wisely.”

Sperling notes that about half of the energy used in the U.S. economy is wasted, a statistic backed by Lawrence Livermore National Laboratory.

Funding, purpose and oversight

- The Retrofit Ramp-Up program is part of the competitive grants awarded through \$454 million in the Recovery Act dedicated to Energy Efficiency and Conservation Block Grants for municipalities. Other competitive grants are awarded under the General Innovation Fund, which awards funding to municipalities not eligible for population-based funding.
- Retrofit Ramp-up funding is meant to catalyze nationwide energy upgrades that could save \$100 million annually in utility bill costs for American homes and businesses.
- The Energy Department will gauge awardees' progress by looking at how they use funding

“If we can tighten up those homes, we can help the American people put their money to better use, and — in doing that — we can put people to work,” he says.

Ben Taube, executive director for SEEA, emphasizes that the retrofit funding his organization awarded to Charlotte is meant to spark private investments, which echoed Sperling’s sentiments that awardees should work to find ways to turn every \$1 of federal funding into \$5.

“Our goal is to be a catalyst,” Taube says, “to create energy efficiency programs that last beyond the initial influx of dollars.

MARTIN COUNTY

N.C. agency growing, helping citizens save money

North Carolina will receive \$132 million, or 10 times more money than in years past, for its weatherization program through the Recovery Act. Martin County Community Action is tasked with weatherizing about 1,792 units with its \$7.7 million share. The agency has also surpassed its 123 units from its usual fiscal year funding.

“It’s been interesting ramping up like this, but we’ve put our agency in a position the last couple of years to be able to do more creative enterprises,” CEO Reginald Speight says.

MCCA runs a hybrid program in the state that has expanded energy efficiency services to municipalities and made advanced-income households eligible for weatherization, and this work helped prepare the agency for the workload it is seeing now under the Recovery Act. Reginald says harsher-than-usual winter months made MCCA slower to weatherize than in the past, but that the majority of weatherization is able to take place in the spring and summer.

“We didn’t anticipate all of that snow, so there were some things we couldn’t get beyond that made us slower than we’d hoped to be at first,” he says. “But now, we’ve had to do hiring and bring in additional crews and are working with the local community college on a training curriculum — I really believe the fruit of our labor has yet to be seen, but we’ll be up-to-speed and doing a lot of work like we’ve always done very soon.”

Residents who have their homes weatherized will see changes

such as better insulation, caulking, weather stripping and other energy-saving retrofits like more-efficient appliances or light bulbs. Once their home is weatherized, a homeowner usually ends up saving about 30 percent on energy bills.

“Weatherization is not rocket science, but it is a science,” Reginald says. “We’re doing what’s most effective to go in and perform the correct diagnostics that result in the biggest bang for our buck.”

Regardless of being named after Martin County, MCCA actually services six counties in North Carolina. As a result of the stimulus weatherization efforts, the agency has grown and opened new offices, often within the buildings where citizens pay their utility bills.

“They go in and pay their bills at one door and walk right next door to us,” Reginald says. “They say they just paid \$300 on their utility bill and we say, ‘you need weatherization.’”

HAMLET

N.C. college to implement efficient climate controls

The stimulus is saving North Carolina’s taxpayers some money while helping Richmond Community College, in Hamlet, become more energy-efficient.

RCC was awarded a \$157,000 Energy Efficiency and Conservation Block Grant from the Department of Energy through the Recovery Act. The grant will help the college improve the efficiency of systems that use energy as well as give them the ability to remotely monitor energy use and adjust thermostats, acts that are expected to save about \$21,000 annually.

“Right now, a building’s heating and cooling systems are totally on or totally off,” Glenn Sims, director of Facility Services, says. “These new upgrades will allow me to control each unit individually, like when we’re off for breaks, I’ll be able to turn off 23 of the 24 units in a building and just run the one needed for the office that’s being used.”

By using the new systems, RCC estimates it will cut energy use by as much as 18 percent, which is great news considering the school’s annual energy costs have hovered around \$230,000 annually. That money comes from county taxes. RCC Facility Services’ employees will use software to reduce the climate control for classrooms after classes and on weekends, and the process yields additional savings because less troubleshooting has to occur manually.

“Technicians can use the software to monitor and correct problem areas if one area of a building has a hot or cold spot, all without having to use manpower to walk to every building,” Glenn says. “I’m excited because it’s going to give us more flexibility in how we heat and cool our buildings.”

Another reason Glenn’s excited is because the college estimates the upgrades will pay for themselves after only three years.

“We’re showing the community we want to be good stewards of their money and spend it wisely with a high payback,” he says. “We’re taking a good step in that direction here because it’s not even 10 or 15 years — we’ll see pretty rapid results.”