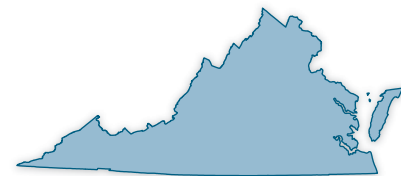




Department of Energy Recovery Act State Memos

Virginia



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 • VIRGINIA RECOVERY ACT SNAPSHOT

Funding for selected DOE projects: \$422.1 million

DOE Recovery Act projects in Virginia: 86

Clean energy tax credits and grants: 5

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

Virginia has substantial natural resources, including coal and natural gas. 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 Virginia are supporting a broad range of clean energy projects, from energy efficiency and the smart grid to alternative fuel vehicles and the Thomas Jefferson National Accelerator Facility in Newport News. Through these investments, Virginia's businesses, universities, non-profits, and local governments are creating quality jobs today and positioning Virginia to play an important role in the new energy economy of the future.

EXAMPLES OF VIRGINIA FORMULA GRANTS

Program	State Energy Program	Weatherization Assistance Program	Energy Efficiency Conservation Block Grants	Energy Efficiency Appliance Rebate Program
Award (in millions)	\$70	\$94.1	\$60.7	\$7.5
	The Virginia Department of Mines, Minerals and Energy has received \$70 million to invest in state-level energy efficiency and renewable energy priorities.	The Commonwealth of Virginia has received \$94.1 million to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions and saving money for Virginia's low-income families. Over the course of the Recovery Act, Virginia expects to weatherize nearly 9,200 homes.	Twenty-nine communities in Virginia has received a total of \$60.7 million to develop, promote, implement, and manage local energy efficiency programs.	The Department of Mines, Minerals and Energy has received \$7.5 million to offer consumer rebates for purchasing certain ENERGY STAR® appliances, which reduce energy use and save money for families, while helping the environment and supporting the local economy.

EXAMPLES OF VIRGINIA COMPETITIVE GRANTS AND TAX CREDITS

Award	\$65 million	\$15.7 million	\$10 million	\$8.6 million
	The Continuous Electron Beam Accelerator Facility (CEBAF) at the Thomas Jefferson National Accelerator Facility in Newport News was awarded \$65 million to advance the funding for an upgrade of the accelerator.	The Rappahannock Electric Cooperative was awarded \$15.7 million as part of the Smart Grid Investment Grant program to implement advanced meters, cyber security equipment, and digital automation on the state's electrical grid.	A \$10 million award will go towards infrastructure projects at Thomas Jefferson National Accelerator Facility to support the lab's mission for scientific discovery.	The Virginia Department of Mines, Minerals and Energy was awarded \$8.6 million from the Clean Cities Alternative Fuel and Vehicles Grant Program to deploy converted propane-fueled vehicles and fueling stations in Richmond, which will reduce the state's dependence on oil and limit carbon pollution.

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	\$94.1
	<i>State Energy Program (F)</i>	1	\$70.0
	<i>Energy Efficiency and Conservation Block Grant (F)</i>	29	\$60.7
	<i>Energy Efficient Appliance Rebate (F)</i>	1	\$7.5
	<i>Building Energy Efficiency (CM)</i>	16	\$0.01
	<i>Industrial Energy Efficiency (CM)</i>	2	\$1.8
	<i>Additional Programs (CM & C)</i>	1	\$0.1
	TOTAL Energy Efficiency	51	\$234.2
Renewable Energy	<i>Solar (CM)</i>	1	\$0.6
	<i>Geothermal (CM)</i>	1	\$1.5
	TOTAL Renewable Energy	2	\$2.1
Electric Grid	<i>Smart Grid Investment and Demonstrations Project (CM)³</i>	3	\$54.6
	<i>State and Local Energy Assurance and Regulatory Assistance (F)</i>	3	\$2.1
	<i>Smart Grid Workforce Training (CM)</i>	1	\$0.2
	TOTAL Electric Grid	7	\$56.9
Transportation	<i>Advanced Battery Manufacturing (CM)</i>	1	\$0.2
	<i>Transportation Electrification (CM)</i>	1	\$0.7
	<i>Clean Cities Alternative Fuel and Vehicles Program (CM)</i>	1	\$8.6
	<i>Advanced Fuels (CM)</i>	1	\$20.5
	<i>Additional Programs (CM)</i>	1	\$7.3
	TOTAL Transportation	5	\$37.3
Carbon Capture and Storage	<i>Research and Training (CM)</i>	1	\$0.2
	TOTAL Carbon Capture and Storage	1	\$0.2
Environmental Cleanup	<i>Environmental Management Contracts (C)</i>	1	\$0.4
	TOTAL Environmental Cleanup	1	\$0.4
Science and Innovation	<i>Small Business Research (SBIR/STTR) (CM)</i>	3	\$0.4
	<i>National Laboratory Facilities (C)</i>	11	\$86.8
	<i>Additional Programs</i>	5	\$3.8
	TOTAL Science and Innovation	19	\$91.0
TOTAL - DOE Programs⁴		86	\$422.1
Tax Credits/ Payments ⁵	<i>Payments for Renewable Energy Generation in Lieu of Tax Credits (1603)</i>	5	\$1.7
	TOTAL Tax Incentives	5	\$1.7
TOTAL - DOE/Treasury + DOE		91	\$423.8
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 – 51 projects totaling \$234.2 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): \$94.1 million, Weatherization Assistance Program (WAP)

Location: Statewide

Virginia received \$94.1 million to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions and saving money for Virginia's low-income families. Over the course of the Recovery Act, Virginia expects to weatherize nearly 9,200 homes. The Department of Housing and Community Development (DHCD) administers the Weatherization Assistance Program in all of Virginia's localities. In selecting local weatherization agencies, the state gives preference to any community action agency or other public or nonprofit organization which has experience successfully administering the program. Local agencies prioritize service to elderly and handicapped residents, families with children, high energy consuming households and homes with an energy related crisis. Within those priorities local agencies are responsible for scheduling eligible clients to receive energy audits and weatherization services.

Award(s): \$70 million, State Energy Program (SEP)

Location: Statewide

The Virginia Department of Mines, Minerals and Energy received \$70 million to invest in state-level energy efficiency and renewable energy priorities. Virginia proposes to spend the State Energy Program Recovery Act funds in three program areas to be administered by Department of Mines, Minerals and Energy (DMME): to stimulate purchases of renewable energy systems for residences, businesses and government facilities; to support biomass, waste-to-energy, renewable energy and energy efficiency products, services and projects; and to stimulate implementation of energy efficiency improvements in homes and commercial properties.

Award(s): 29 totaling \$60.7 million, Energy Efficiency and Conservation Block Grant Program (EECBG)

Location: Statewide

Recipients: Albemarle County, Alexandria, Arlington County, Town of Blacksburg, Charlottesville, Chesapeake, Chesterfield County, Danville, Fairfax County, Hampton, Hanover County, Harrisonburg, Henrico County, Town of Leesburg, Loudoun County, Lynchburg, Manassas, Newport News, Norfolk, Portsmouth, Prince William County, Richmond, Roanoke, Roanoke County, Spotsylvania County, Stafford County, Suffolk, Virginia Beach, Virginia State Energy Office

Twenty-nine communities in Virginia received a total of \$60.7 million to develop, promote, implement and manage local energy efficiency programs.

The project funds programs that reduce fossil fuel emissions in a manner that is environmentally sustainable and maximizes cost savings for regional communities and Indian tribes, reduce the total energy use of the eligible entities, and improve energy efficiency in the transportation, building and other appropriate sectors.

Award(s): \$7.5 million, Energy Efficient Appliance Rebate Programs

Location: Statewide

The Department of Mines, Minerals and Energy received \$7.5 million to offer consumer rebates for purchasing certain ENERGY STAR® appliances, which reduce energy use and save money for families, while helping the environment and supporting the local economy. This program provides federal support for state-level rebate programs for residential ENERGY STAR appliance purchases by paying up to 50 percent of the administration costs of establishing and executing the rebate program. Though states and territories determine which appliances apply, covered appliances typically include clothes washers, dishwashers, refrigerators, freezers, room air conditioners and water heaters.

Award(s): \$1.6 million, Advanced Materials RD&D in Support of Clean Energy Technologies and Energy-Intensive Process R&D

Location: Arlington

Environ Holdings, Inc., in Arlington received \$1.6 million for Advanced Materials RD&D in Support of Clean Energy Technologies and Energy-Intensive Process R&D. The funding supports research and development of a fuel-flexible combustion system for refinery and chemical plant process heaters.

Award(s): 16 totaling \$15,000, Buildings and Appliance Market Transformation

Location: Statewide

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.

- Sears and Roebuck and Co. (10), Norfolk - \$10,000
- Elmbrook Corporate Services (2), Virginia Beach - \$2,100
- Drillspot, Norfolk - \$1,100
- Virginia Air Distributors, Inc., Midlothian - \$800
- Air & Water, Inc., Norfolk - \$400
- Walmart, Norfolk - \$300

Award(s): \$100,000, Ground Source Heat Pumps

Location: Arlington

Environ Holdings, Inc., in Arlington received \$100,000 for Ground Source Heat Pumps to ...

Award(s): \$222,000, Improved Energy Efficiency for Information and Communication Technology

Location: Manassas

BAE Systems in Manassas received \$222,000 for Improved Energy Efficiency for Information and Communication Technology. This concept definition study is developing a model for Real-Time Optimal Control (RTOC) algorithms designed to throttle network component power consumption up or down based on the need for services within a data or telecommunications center.

RENEWABLE ENERGY – 7 projects totaling \$3.2 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): 5 payments totaling \$1.7 million, 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>.

Virginia received two 1603 payments for renewable energy generation totaling \$1.7 million, which include wind and geothermal projects.

- **Ameresco, Inc., Stafford - \$1.1 million**
Ameresco, Inc., in Stafford received \$1.1 million for a landfill gas-to-energy project.
- **New Day Farms, Inc., Bealeton - \$578,000**
New Day Farms, Inc., in Bealeton received \$578,000 for a solar thermal system.
- **Shenandoah Sustainable Technologies, LLC, Springfield - \$39,000**
Shenandoah Sustainable Technologies, LLC, in Springfield received \$39,000 for geothermal heat pumps.
- **West End Car Wash, Luray - \$3,000**
West End Car Wash in Luray received \$3,000 for a solar thermal system.
- **Gumbos Creole Café, Richmond - \$2,000**
Gumbos Creole Café in Richmond received \$2,000 for a solar thermal system.

Award(s): \$1.5 million, Enhanced Geothermal Systems (EGS) Technology R&D

Location: Alexandria

Bob Lawrence & Associates, Inc., in Alexandria received \$1.5 million for EGS Technology R&D to fund an analysis that measures the costs and economic, social and environmental benefits of nationwide geothermal heat pump deployment, including employment potential and energy and environmental impacts.

Award(s): \$600,000, High-Penetration Solar Deployment

Location: Blacksburg

Virginia Tech in Blacksburg received \$600,000 for High-Penetration Solar Deployment to evaluate existing Virginia Tech prototype power conditioners to identify cost-effective approaches to address issues associated with high-penetration PV systems. These include voltage regulation, reverse power flow, unintentional islanding, false inverter trips, reactive power control, fault contribution, protection, communications and intentional islanding operation.

MODERNIZING THE ELECTRIC GRID – 7 projects totaling \$56.9 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): 2 totaling \$1.1 million, Enhancing State and Local Governments' Energy Assurance

Location: Richmond, Virginia Beach

This project focuses on building regional energy assurance capability by enhancing inter- and intra-state coordination and cooperation during energy emergencies. This project funds states to update or develop State Energy Assurance Plans incorporating new energy portfolios such as wind, biofuels and other renewables, and cities to update or develop Energy Assurance Plans within the local areas. The two sets of funding are used to hire or retrain staff to build in-house expertise in Smart Grid technologies, critical energy infrastructure interdependencies, and cyber-security.

- **Virginia Department of Mines, Minerals and Energy, Richmond - \$913,000**
The Virginia Department of Mines, Minerals and Energy in Richmond received \$913,000 for Enhancing State and Local Governments' Energy Assurance.
- **Virginia Beach - \$200,000**
Virginia Beach received \$200,000 for Enhancing State and Local Governments' Energy Assurance.

Award(s): 2 payments totaling \$20.7 million, Smart Grid Investment Grant Program (EISA 1306)

Location: Fredericksburg, Manassas

- **Rappahannock Electric Cooperative, Fredericksburg - \$15.7 million**
The Rappahannock Electric Cooperative received \$15.7 million for the Smart Grid Investment Grant Program (EISA 1306) to implement advanced meters, cyber-security equipment and digital automation of meters.
- **Northern Virginia Electric Cooperative, Manassas - \$5 million**
The Northern Virginia Electric Cooperative (NVEC) received \$5 million for the Smart Grid Investment Grant Program (EISA 1306) to replace older equipment with Smart Grid technology. NVEC estimates it will save \$600,000 annually in power costs.

Award(s): \$33.9 million, Smart Grid Regional and Energy Storage Demonstration Project (EISA 1304)

Location: Arlington

National Rural Electric Cooperative Association in Arlington received \$33.9 million for the Smart Grid Regional and Energy Storage Demonstration Project (EISA 1304). This project involves installing and operating a suite of diverse Smart Grid technologies and aggregating the data from 17 rural electric cooperatives across eleven states. Technologies include over 130,000 meters and over 18,000 demand response switches. In addition to customer-focused technologies, the project includes voltage sensors and fault detectors. The demonstration data is centralized for all sites and includes studies such as Advanced Volt / VAR for Total Demand, Distributed Resources and critical peak pricing via Smart Grid networks, customer appliance control, time sensitive rate pilots, and Self-Healing Feeders for Improved Reliability.

Award(s): \$247,000, Smart Grid Workforce Training

Location: Arlington

National Electrical Manufacturers Association in Arlington received \$247,000 for Smart Grid Workforce Training. Under this project, “Vids for Grids: New Media for the New Energy Workforce,” a series of short educational videos, will be produced on power grid operations and Smart Grid equipment demonstration, assembly, installation and use. In collaboration with Northern Virginia Community College and George Mason University, the videos are being integrated into basic electrical engineering curricula and made widely available to colleges, training centers and the general public. The project is expected to increase student understanding of electrical engineering concepts, increase student interest in pursuing power systems careers and demonstrate a best practice in integrating new media into engineering core curricula.

Award(s): \$948,000, State Assistance on Electricity Policies

Location: Richmond

Virginia State Corporation Commission in Richmond received \$948,000 for State Assistance on Electricity Policies. This project provides funds to be used by states and their Public Utility Commissions (PUCs) to hire staff to facilitate timely review of the expected large number of time-sensitive requests to approve electric utility expenditures undertaken as part of the Act.

TRANSPORTATION – 5 projects totaling \$37.3 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): \$233,000, Advanced Battery Manufacturing

Location: McLean

Mangi Environmental Group, Inc., in McLean received \$233,000 for Advanced Battery Manufacturing. This funding is being used for National Environmental Policy Act (NEPA) support services.

Award(s): \$8.6 million, Clean Cities Alternative Fuel and Vehicles (AFV) Grant Program

Location: Richmond

Virginia Department of Mines, Minerals and Energy in Richmond received \$8.6 million for the Clean Cities Alternative Fuel and Vehicles (AFV) Grant Program to deploy 1064 converted propane fueled vehicles and seventeen propane fueling stations.

Award(s): \$7.3 million, Enabling Fuel Cell Market Transformation

Location: Reston

Sprint Communications Company, LP, in Reston received \$7.3 million for Enabling Fuel Cell Market Transformation to demonstrate the financial and operational feasibility of using Proton Exchange Membrane (PEM) Hydrogen Fuel Cells (HFC) to provide backup power for critical cell sites.

Award(s): \$20.5 million, Modify Integrated Biorefinery Solicitation Program for Pilot and Demonstration Scale Biorefineries

Location: Arlington

Logos Technologies, Inc., in Arlington received \$20.5 million for the Modify Integrated Biorefinery Solicitation Program for Pilot and Demonstration Scale Biorefineries. A corn-to-cellulosic migration

(CCM) Project Team is modifying an existing pilot plant to process cellulosic feedstock into ethanol, beginning with corn stover. The pilot plant is demonstrating and quantifying the process technologies, including innovative mechanical pretreatment, improved yeast and advanced enzymes. The pilot plant results enable a three-stage commercialization plan to migrate corn-based ethanol plants to non-food cellulosic feedstocks.

Award(s): \$720,000, Transportation Electrification

Location: Richmond

The Virginia Community College System in Richmond received \$720,000 for Transportation Electrification to develop and implement courses for technician training in new and emerging propulsion technologies: electric vehicles, plug-in hybrid electric vehicles and fuel cell electric vehicles.

CARBON CAPTURE & STORAGE – 1 project totaling \$248,000

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): \$248,000, Geologic Sequestration Training and Research Grant Program

Location: Blacksburg

Virginia Tech in Blacksburg received \$248,000 for the Geologic Sequestration Training and Research Grant Program to train two graduate students in the use of double-difference seismic tomography for geologic sequestration monitoring, verification and accounting. The students are establishing data collection and processing requirements so that double-difference seismic tomography can be used to quantitatively map the mass and propagation of sequestered carbon dioxide as a function of time. Existing field data is being analyzed using double-difference tomography to image plume migration. A graduate course will be developed to enable students to apply the most recent methods for using geophysical tools to image underground changes due to sequestration.

ENVIRONMENTAL CLEANUP - 1 project totaling \$400,000

Creating jobs and reducing the legacy cold war footprint of the Department of Energy, and cleaning up the polluted land and water resources in communities. For more information, visit <http://www.energy.gov/recovery/cleanup.htm>.

Award(s): \$400,000, Title X Uranium / Thorium Reimbursement Program

Location: Fort Belvoir

Defense Contract Audit Agency at Fort Belvoir received \$400,000 for the Title X Uranium / Thorium Reimbursement Program to eliminate the government's liability for environmental cleanup at sites that produced uranium (U) and thorium (Th) during the Cold War era for DOE and its predecessors. The funding provided by ARRA may enable the licensees of these sites to accelerate the completion of cleanup programs and eliminate the environmental risks at these sites.

SCIENCE AND INNOVATION – 19 projects totaling \$91 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): \$65 million, Advance Funding of 12 Giga-electron Volt (GeV) Continuous Electron Beam Accelerator Facility (CEBAF) Upgrade

Location: Hidenwood

Jefferson Science Associates, LLC, in Hidenwood received \$65 million for Advance Funding of 12 GeV CEBAF Upgrade. The upgrade to the Continuous Electron Beam Accelerator Facility at the Thomas Jefferson National Accelerator Facility will double the energy of the lab's electron beam accelerator, providing scientists with an unprecedented tool for studying the nucleus of the atom.¹ The Recovery Act funding of \$65 million advances the funding profile of the \$310 million project, thereby reducing out-year funding requirements.

Award(s): \$1.9 million, Advanced Technology R&D Augmentation

Location: Hidenwood

Jefferson Science Associates, LLC, in Hidenwood received \$1.9 million for Advanced Technology R&D Augmentation to provide funding for in-hand proposals that will advance accelerator and detector technologies for particle physics research at the Thomas Jefferson National Accelerator Facility.

Award(s): \$748,000, Computational Partnerships (SciDAC-e)

Location: Fairfax

George Mason University in Fairfax received \$748,000 for Computational Partnerships (SciDAC-e). This project provides funds for a one-time stimulus of research efforts in applied mathematics and in computer science to establish the computational foundation and the insight needed to advance DOE's mission across a wide range of areas, including developing novel, renewable and / or ecologically friendly energy sources and Smart Grids.

Award(s): 4 totaling \$3 million, Energy Sciences Fellowships and Early Career Research Program

Locations: Blacksburg, Hampton, Charlottesville

This project is to create graduate, post-doctoral, and early career fellowship awards to stimulate research careers in energy, environmental and climate change sciences.

- **Virginia Tech, Blacksburg - \$750,000**

Virginia Tech in Blacksburg received \$750,000 for the Energy Sciences Fellowships and Early Career Research Program. This project involves diffusion on complex networks with algorithmic foundations.

- **Hampton University, Hampton - \$799,000**

Hampton University in Hampton received \$799,000 for the Energy Sciences Fellowships and Early Career Research Program. This project involves the search for time reversal symmetry violation with Time Reversal Experiment with Kaons (TREK) and Japan Proton Accelerator Research Complex (J-PARC).

¹ <http://www.jlab.org/index.html>

- **University of Virginia, Charlottesville - \$786,000**
The University of Virginia in Charlottesville received \$786,000 for the Energy Sciences Fellowships and Early Career Research Program. This project involves the measurement of parity violation in deep inelastic scattering and studies of the nucleon spin structure at Jlab 6 and 11 GeV.
- **Virginia Tech, Blacksburg - \$750,000**
Virginia Tech in Blacksburg received \$750,000 for the Energy Sciences Fellowships and Early Career Research Program to study neutrinos in the universe.

Award(s): \$2.8 million, Enhanced AIP Funding at NP User Facilities

Location: Hidenwood

Jefferson Science Associates, LLC, received \$2.8 million for Enhanced AIP Funding at NP User Facilities to fund Thomas Jefferson National Accelerator Facility Improvement Projects (AIP) at NP facilities, enhancing operations at the facilities and contributing to the support of scientific research and training of the next generation of nuclear scientists.

Award(s): \$5 million, Lattice Quantum ChromoDynamics Computing

Location: Hidenwood

Jefferson Science Associates, LLC, received \$5 million for Lattice Quantum ChromoDynamics Computing at the Thomas Jefferson National Accelerator Facility. This Recovery Act project allows the purchase and operation of computer hardware for the first principles calculations of the properties of nuclear matter, based on the theory of quarks and gluons, which will allow realistic calculations that will be used to interpret the results of existing and future experiments. The equipment will be sited in existing computer space at Thomas Jefferson National Accelerator Facility (TJNAF).

Award(s): \$1.8 million, Nuclear Science Workforce

Location: Hidenwood

Jefferson Science Associates, LLC, received \$1.8 million for the Nuclear Science Workforce program. This project permits the development of understaffed and underfunded areas in nuclear physics with compelling scientific opportunities. ARRA funding is being used for initiatives in Applications of Nuclear Science and Technology, aimed at research and development activities in nuclear science that are relevant to applications important to the nation.

Award(s): \$135,000, Research and Infrastructure Augmentation at Universities in the High Energy Physics (HEP) Program

Location: Charlottesville

The University of Virginia in Charlottesville received \$135,000 for Research and Infrastructure Augmentation at Universities in the HEP Program to provide world-class, peer-reviewed research results in high energy physics and related fields, including particle astrophysics and cosmology.

Award(s): 4 totaling \$110,000, Office of Scientific and Technical Information (OSTI) Technology Infrastructure

Location: Statewide

The project supports Office of Scientific and Technical Information (OSTI) Technology Infrastructure upgrades in support of DOE and the public and scientific community, including live alternate processing sites capable of hosting all of OSTI's scientific dissemination services.

- **PC Mall Gov, Inc. - \$65,000**
- **DLT Solutions, LLC. - \$23,000**
- **Sun Management, Inc. - \$19,000**
- **Shields Electronics Supply, Inc., Norfolk - \$2,500**

Award(s): 3 totaling \$450,000, Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Round 1

Locations: Roanoke, Charlottesville

This project supports Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs. DOE strives to maintain a strong and appropriately balanced core research program by supporting R&D at universities, the DOE national laboratories, and small businesses.

- **Luna Innovations, Inc., Roanoke - \$150,000**
Luna Innovations, Inc., in Roanoke received \$150,000 for SBIR / STTR to advance nano-material production for OPV acceptors.
- **Luna Innovations, Inc., Roanoke - \$150,000**
Luna Innovations, Inc., in Roanoke received \$150,000 for SBIR / STTR for a project involving radiation tolerant, ultra-high temperature sensors for in-core use.
- **Columbia Power Technologies, LLC, Charlottesville - \$150,000**
Columbia Power Technologies, LLC, in Charlottesville received \$150,000 for SBIR / STTR for a project involving a high torque, low cost, direct-drive rotary generator.

Award(s): \$10 million, Thomas Jefferson National Accelerator Facility (TJNAF) Infrastructure Investments

Location: Hidenwood

Jefferson Science Associates, LLC, in Hidenwood received \$10 million for infrastructure projects at Thomas Jefferson National Accelerator Facility (TJNAF) to support the lab's mission for discovery science. By addressing the backlog of planned infrastructure projects at TJNAF, it enhances safety, expands capabilities, extends useful life expectancy, improves efficiency, reduces maintenance and / or improves reliability of infrastructure components at the laboratory. Supported projects include: Experimental Staging Facility, General Purpose Building (GPB), End Station Refrigerator Building and Utilities, Test Lab Service Transformer Upgrade and Roads and Parking Improvements.

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/Virginia



Kristan Castro wears his full protective gear during a home weatherization. | Photo courtesy EDGE Energy

McLEAN

Northern Virginia grows local energy business

It didn't take long for Kristan Castro to be convinced of the benefits of performing energy audits on homes and weatherizing them to improve their energy efficiency. He's been in the remodeling business for about 13 years, it wasn't until this year that he decided to join a team that is saving Americans money and ultimately helping the environment in the D.C.-metro area.

While the company Kristan works for, EDGE Energy in McLean, Va., mostly does efficiency upgrades for middle- and upper-class Americans, it has also recently completed the weatherization of about 40 low-income homes in Maryland for the Department of Housing and Community Development thanks to the Recovery Act. The company will also become qualified to weatherize homes in Virginia this year.

EDGE Energy hired Kristan earlier this year as a crew manager, performing energy services and insulation work. The addition of weatherization work for community agencies, combined with an

increase in energy efficiency tax credits, has allowed EDGE Energy to go from four trucks to eight and hire about three additional crews like the one Kristan manages.

The stimulus tax credits and a raised awareness about energy efficiency have helped make weatherization an easy sell to clients, says Jason Dispenza, quality assurance designee and office manager for EDGE Energy. Once an energy audit is performed, the incentives become appealing to his clients.

Kristan saw the benefits, too, and now he's excited about his work in green remodeling. "Jason trained me in energy services," Kristan says. "You know what? I liked it! I think it's interesting, and it makes sense to me. So here we are doing business."

Business has picked up and kept the company very busy, and Kristan feels good that he and his coworkers help people through long-term money savings.

"A renewed focus on retrofitting is very necessary," Kristan says. "I've seen homes that are badly insulated before and were not even appropriate to live in, so I think it's good the government is paying attention."

Clients send the company e-mails saying they can tell the difference in their energy bills and in the comfort level inside their homes. Kristan ran into one such client a couple weeks after finishing a job, he says, and the client told him how noticeable the differences in heating and cooling requirements for the home were.

"I think everybody's happy with the improvements we make in their houses," Kristan says, "We're doing important work."

STAUNTON

Greener commercial A/C units becoming a cool item

A new federal tax credit is helping McQuay International expand its line of energy-efficient HVAC products at two of its plants and bring back furloughed workers.

With the help of a 48C manufacturing tax credit worth \$2 million under the American Recovery and Reinvestment Act, McQuay's Minnesota and Virginia plants have been or will be upgraded and expanded to produce new lines of energy efficient products.

The tax credit is playing a role, but offering a bigger—and more efficient—selection of HVAC products also came down to basic economics: the customers were requesting it.

"There is strong appetite for this," says Don Winter, vice president of marketing at McQuay, which is based in Minneapolis. "Almost across the board, we are launching multiple new product families that are more energy efficient than their predecessors. We see it is an important trend for us."

The \$7 million investments started last year at the Staunton, Va., plant, which expanded operations to manufacture a new line of air-cooled chillers, some of which are up to 50 percent more efficient than its standard model. "In fact," Winter says, "now we have five



McQuay makes chillers in its Staunton, Va. plant that are up to 50 percent more energy efficient than standard models. | Photo courtesy of McQuay

different efficiency levels.”

Plans for new construction and equipment upgrades at the Minnesota plant are also underway. This facility will be expanding its line of energy-efficient, roof top HVAC units.

All these products can contribute to multiple LEED points for a building and save companies thousands of dollars per month in electric bills.

Crawford Condominiums in Portsmouth, Va., a 19-story complex built in the 1960s, achieved a savings of \$3,000 a month in electrical costs after two of McQuay’s chillers were installed, according to McQuay. Herakles Data of Sacramento, Calif., a data processing center, installed five modular central plant systems (a chiller, cooling tower and water treatment system all in one) and saw a 22 percent reduction in energy use. That reduced energy usage earned the company a \$50,000 rebate from the Sacramento Municipal Utility District.

New products, new jobs

2009 was a challenging year for McQuay due to the economy, but the recent investments are allowing the plants to take on new — and old — employees.

Winter says the Virginia plant has brought back furloughed workers and hired new employees as a result of the expansion and tax credit.

The Minnesota plant also had a series of furloughs last year. The new manufacturing investment could turn that around. “It is our desire and hope that this creates jobs,” he says.

More about 48C

The U.S. Department of Energy and U.S. Department of the Treasury partnered to help fund more than 180 clean energy manufacturing projects through the 48C tax credit. The funds will be used to produce solar panels, wind turbines, geothermal equipment and other clean energy projects, like energy-efficient HVAC units—putting the country on track to double capacity to manufacture these components by 2012.

LEED-er status

The company may be giving the people what they want, but its own environmental policy is worth noting.

Winter says the company is always looking for ways to minimize operating costs and cut down on energy use by investing in more energy-efficient equipment for all its plants.

This week, the office space at the Staunton facility earned the LEED silver certification, in part by using McQuay’s own energy-efficient rooftop system to reduce energy used in the engineering wing and by reducing its water consumption by 40 percent.

“We want to practice what we preach,” says Winter.

ROANOKE

Projects and savings back on track in Virginia city

Roanoke, Va., is nestled in the Blue Ridge Mountains amidst the farms and fields along Interstate 81 in southwestern Virginia. With budget cuts, the city put projects on hold. Now, with a \$963,700 Energy Efficiency and Conservation Block Grant awarded through the U.S. Department of Energy and the American Recovery and Reinvestment Act, a stalled project is moving ahead and the city is looking at \$86,000 in annual energy savings and reduced labor costs across several projects.

Retrofitting Roanoke

“In the business of reducing energy, some of the low-hanging fruit is typically with lighting,” says Kenneth Cronin, sustainability coordinator for the city. “We had some antiquated equipment out there that needed replacing, and the block grant helped us tremendously with the upfront costs.”

Through the Block Grant, Cronin will oversee lighting and other projects that will have a substantial impact on the city’s energy costs. The projects include a city-wide replacement of incandescent traffic signals with LEDs; courthouse lighting retrofits; the installation of digital, programmable climate controls in the courthouse; and the replacement of high-pressure sodium and metal halide lighting with LED lighting in the Market Square parking garage.

Roanoke has been moving to save energy and decrease costs for some time, but some projects had been put on hold. The Block Grant enabled Roanoke to finish changing its traffic signals to LEDs, a project it had already started. The city is also working on a separate project that has been accelerated by the retrofits — it is calculating better timing for the signals, which also helps motorists save fuel and reduce greenhouse gas emissions.

As a member of an organization that focuses on local governmental sustainability, Roanoke has been working toward reducing its carbon footprint for years.

“The way we reduce our greenhouse gas emissions is nice because it means saving energy, which saves the city money,” Cronin says. “In Roanoke, 88 percent of our electricity comes from coal, so obviously with electricity-based projects such as lighting retrofits, we can reduce our emissions by reducing our kilowatt hours of electricity usage.”

Roanoke’s block grant-funded projects are expected to be complete by the end of 2010, and the city is continuing toward a goal of reducing its greenhouse gas emissions by 2 percent each year through 2014.