Department of Energy

Recovery Act State Memos

Tennessee

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 • TENNESSEE RECOVERY ACT SNAPSHOT

Funding for selected DOE projects: $1.3 billion

DOE Recovery Act projects in Tennessee: 120

Clean energy tax credits and grants: 7

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

Tennessee has substantial natural resources, including coal and hydroelectric power. 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 Tennessee are supporting a broad range of clean energy projects, from energy efficiency and the smart grid to solar and advanced batteries, as well as over $580 million to accelerate environmental cleanup efforts on the Oak Ridge Reservation. Through these investments, Tennessee's businesses, Oak Ridge National Laboratory, non-profits, and local governments are creating quality jobs today and positioning Tennessee to play an important role in the new energy economy of the future.

EXAMPLES OF TENNESSEE FORMULA GRANTS

Program	State Energy Program	Weatherization Assistance Program	Energy Efficiency Conservation Block Grants	Energy Efficiency Appliance Rebate Program
Award (in millions)	$62.5	$99.1	$42.2	$6
	The Tennessee Department of Economic and Community Development has received $62.5 million to invest in state-level energy efficiency and renewable energy priorities.	The State of Tennessee has received $99.1 million to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions and saving money for Tennessee's low-income families. Over the course of the Recovery Act, Tennessee expects to weatherize more than 10,500 homes.	Twenty-eight communities in Tennessee received a total of $42.2 million to develop, promote, implement, and manage local energy efficiency programs.	Tennessee has received $6 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 TENNESSEE COMPETITIVE GRANTS, TAX CREDITS AND LOANS

Award	$1.4 billion	$655.7 million	$111.6 million	$281 million	$63 million
	Nissan North America closed a **$1.6 billion loan arrangement** under the Department of Energy's **Advanced Technology Vehicles Manufacturing program** to retool its Smyrna, Tennessee factory to build advanced electric automobiles and to build an advanced battery manufacturing facility. The company estimates the project will create up to 1,300 jobs.	The Oak Ridge site received over **$655.7 million** to create jobs and accelerate the environmental cleanup efforts at the site.	**The Electric Power Board of Chattanooga** was awarded **$111.6 million** through the **Smart Grid Investment Grant Program** to deploy a smart grid network, including 170,000 smart meters and grid automation technologies that will improve the reliability and efficiency of the electrical grid and help consumers reduce their energy use and save money.	**Wacker Polysilicon North America** in Charleston was awarded a **clean energy manufacturing tax credit** of **$281 million** to manufacture polysilicon for the PV solar cell market.	**Alstom Inc.** and subsidiaries were awarded a **$63 million clean energy manufacturing tax credit** to establish a new turbine manufacturing facility in Chattanooga for the world's largest steam turbines.

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	*Weatherization Assistance Program (F)*	1	$99.1
	State Energy Program (F)	1	$62.5
	Energy Efficiency and Conservation Block Grant (F)	28	$42.2
	Energy Efficient Appliance Rebate (F)	1	$6.0
	Building Energy Efficiency (CM)	1	$1.6
	Industrial Energy Efficiency (CM)	3	$29.4
	Additional Programs (CM & C)	2	$8.0
	TOTAL Energy Efficiency	37	$24.8
Renewable Energy	*Solar (CM)*	1	$0.9
	Wind (CM)	4	$1.4
	TOTAL Renewable Energy	5	$2.3
Electric Grid	*Smart Grid Investment and Demonstrations Project (CM)[3]*	4	$123.0
	State and Local Energy Assurance and Regulatory Assistance (F)	2	$1.7
	Smart Grid Workforce Training (CM)	1	$2.4
	TOTAL Electric Grid	7	$127.1
Transportation	*Advanced Battery Manufacturing (CM)*	1	$34.3
	TOTAL Transportation	1	$34.3
Environmental Cleanup	*Environmental Management Contracts (C)*	37	$655.7
	TOTAL Environmental Cleanup	37	$655.7
Science and Innovation	*Small Business Research (SBIR/STTR) (CM)*	1	$0.1
	National Laboratory Facilities (C)	27	$194.6
	Additional Programs	5	$31.9
	TOTAL Science and Innovation	33	$226.6
TOTAL - DOE Programs[4]		**120**	**$1,294.8**
Tax Credits/Payments[5]	*Payments for Renewable Energy Generation in Lieu of Tax Credits (1603)*	3	$0.2
	Clean Energy Manufacturing Tax Credits (48C)	4	$352.9
	TOTAL Tax Incentives	7	$353.1
TOTAL - DOE/Treasury + DOE		**126**	**$1,647.9**

[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 – 37 projects totaling $248.8 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): $99.1 million, Weatherization Assistance Program (WAP)
Location: Statewide
Tennessee received $99.1 million to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions and saving money for Tennessee's low-income families. Over the course of the Recovery Act, Tennessee expects to weatherize more than 10,500 homes.

Award(s): $62.5 million, State Energy Program (SEP)
Location: Statewide
The Tennessee Department of Economic and Community Development received $62.5 million to invest in state-level energy efficiency and renewable energy priorities. Tennessee is using this funding to establish a comprehensive solar energy and economic development program, focusing on job creation, education, renewable power production and technology commercialization. Specifically, the funds will establish two grant programs. The Solar Innovation Grant Program encourages growth of Tennessee's solar industry by providing funds to the state's solar industry firms for technical assistance, facility or process improvements and workforce development. The Solar Installation Grant Program will speed the deployment of solar energy statewide through grants to businesses that fund the purchase and installation of small-scale solar photovoltaic systems. Both programs will be administered by the Tennessee Solar Institute at the UT and Oak Ridge National Laboratory. The state also plans to establish a West Tennessee Solar Farm with a 5 MW power generation facility.

Award(s): 28 totaling $42.2 million, Energy Efficiency and Conservation Block Grant Program (EECBG)
Location: Statewide
Recipients: Bartlett, Blount County, Brentwood, Chattanooga, Clarksville, Cleveland, Town of Collierville, Franklin, Germantown, Hamilton County, Hendersonville, Jackson, Johnson City, Kingsport, Knox County, Knoxville, Maury County, Memphis, Murfreesboro, Metropolitan Government of Nashville-Davidson, Rutherford County, Sevier County, Shelby County, Town of Smyrna, Sullivan County, Sumner County, Tennessee Department of Economic Community Development, Wilson County

Twenty-eight communities in Tennessee received a total of $42.2 million to develop, promote, implement and manage local energy efficiency programs.

This grant funds a variety of energy efficiency and conservation programs in local communities across the state, including projects that will replace inefficient lighting in government buildings, streetlamps and traffic signals. Many programs include traditional energy-efficient building retrofit measures, such as the replacement of inefficient heating, ventilation and air conditioning (HVAC) systems, water heaters, windows and insulation materials with more efficient models. In addition,

three grants fund the installation of solar panels on government buildings. Examples of EECBGs include:

- **Tennessee Department of Economic Community Development, Nashville - $13.8 million**
  The Tennessee Department of Economic Community Development in Nashville received $13.8 million to give sub-grants to counties and municipalities for educational outreach, ENERGY STAR® promotion and energy workforce development.

- **City of Memphis - $6.8 million**
  The City of Memphis received $6.8 million to focus on residential energy efficiency improvements, commercial building audits and services, residential programmable thermostats and methane capture from WWTP for cogeneration.

- **Nashville-Davidson Metropolitan Government, Nashville - $6.2 million**
  Nashville-Davidson Metropolitan Government in Nashville received $6.2 million to focus on energy efficiency and conservation strategy.

- **Knox County, Knoxville - $2.1 million**
  Knox County in Knoxville received $2.1 million to focus on the installation of lighting system upgrades, LED traffic signals, water system fixture upgrades, building automation controls, HVAC upgrades, chiller replacements, exhaust heat recovery, variable frequency drive installations, boiler replacements, high efficiency transformers, window treatments, roof upgrades, building envelope upgrades and solar thermal water technology.

- **City of Knoxville - $2 million**
  The City of Knoxville received $2 million to focus on financial incentives, retrofits, PV installation, enhanced building codes and training.

- **City of Chattanooga - $1.9 million**
  The City of Chattanooga received $1.9 million to fund the Office of Sustainability, Green Roofs, Energy Efficient Lighting Demonstration on the Veterans Bridge, Lighting Retrofit on the Walnut Street Bridge, Inductive Lighting Retrofits for City Buildings and a Bike Share Program.

Award(s): $6 million, Energy Efficient Appliance Rebate Programs
Location: Statewide
Tennessee received $6 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. The Tennessee Department of Economic and Community Development focuses on rebates for residential appliances. The State of Tennessee, in partnership with the Tennessee Valley Authority's *Energy Right* program, will provide financial incentives to encourage residents to replace old, inefficient appliances with new, efficient ENERGY STAR qualified appliances. Eligible products include air conditioners, central air conditioners and air source heat pumps.

Award(s): $8 million, Ground Source Heat Pumps
Location: Nashville, Oak Ridge

- **Tennessee Department of Education, Nashville - $3 million**
  The Tennessee Department of Education in Nashville received $3 million for Ground Source Heat Pumps (GHP) to install GHP systems in schools to validate the current hybrid GHP system design model developed by ASHRAE. Oak Ridge National lab will analyze performance and savings.

- **Oakridge City Center, LLC., Oak Ridge - $5 million**
  The Oak Ridge City Center, a shopping mall in Oak Ridge, was awarded $5 million for an innovative ground source heat pump heating/cooling system to reduce overall energy use and save money for businesses in the mall.

Award(s): $125,000 from DOE, Industrial Assessment Centers and Plant Best Practices[1]
Location: Cookeville
Tennessee Technological University in Cookeville received $125,000 for the Industrial Assessment Centers and Plant Best Practices program to provide eligible small and medium-sized manufacturers with no-cost energy assessments and serve as a training ground for the next generation of energy-savvy engineers.

RENEWABLE ENERGY – 12 projects totaling $355.4 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): 3 payments totaling $172,000 from DOE / Treasury, 1603 Payments for Renewable Energy Generation
Location: Powell, Franklin, Millington
*For current number of 1603 awards, see the weekly update at http://www.treas.gov/recovery/1603.shtml

Tennessee received three 1603 Payments for Renewable Energy Generation totaling $172,000 for solar electricity projects.

- **Dixie Roofing, Inc., Powell - $72,000**
  Dixie Roofing, Inc., in Powell received $72,000 for a solar electricity project.

- **MSR 301, LLC, Franklin - $56,000**
  MSR 301, LLC, in Franklin received $56,000 for a solar electricity project.

- **Unistar - Sparco Computers, Inc., Millington - $44,000**
  Unistar - Sparco Computers, Inc., in Millington received $44,000 for a solar electricity project.

[1] One additional Industrial Assessment Centers and Plant Best Practices project can be located in the "Science and Innovation" section within this document.

Award(s): 4 totaling $352.9 million from DOE / Treasury, Clean Energy Manufacturing Tax Credit (48C)
Location: Statewide

- **Wacker Polysilicon North America, LLC, Charleston - $281 million**
  Wacker Polysilicon North America in Charleston received $281 million to manufacture polysilicon for the PV solar cell market.

- **Alstom, Inc., and Subsidiaries, Chattanooga - $63 million**
  Alstom, Inc., and Subsidiaries in Chattanooga received $63 million to establish a new turbine manufacturing facility in Chattanooga for the world's largest steam turbines.

- **Monogram Refrigeration, LLC, Selmer - $7.3 million**
  Monogram Refrigeration, LLC, in Selmer received $7.3 million to install newly purchased machinery and equipment to produce both ENERGY STAR®-qualified and non-ENERGY STAR qualified refrigerators. The creation of these energy efficient appliances will result in a reduction of energy usage.

- **Sharp Electronics Corp., Memphis - $1.7 million**
  Sharp Electronics Corp. in Memphis received $1.7 million to expand current solar manufacturing operations by installing a new crystalline photovoltaic module production line (E-Line) within its current solar facility. The resulting product will be a cost-efficient source of renewable solar energy.

Award(s): 4 totaling $1.4 million, Wind Energy Technology R&D and Testing
Location: Knoxville, Cookesville, Oak Ridge

- **EnerNex Corporation, Knoxville - $688,000**
  EnerNex Corporation in Knoxville received $688,000 for Wind Energy Technology R&D and Testing. This project focuses on documentation, user support and verification of wind turbine and plant models.

- **Electric Power Research Institute, Knoxville - $399,000**
  The Electric Power Research Institute in Knoxville received $399,000 for Wind Energy Technology R&D and Testing. This project focuses on Integrating Midwest wind energy into Southeast electricity markets.

- **Tennessee Technological University, Cookesville - $266,000**
  Tennessee Technological University in Cookesville received $266,000 for Wind Energy Technology R&D and Testing. This project focuses on multi-level energy storage and controls for large-scale wind energy integration.

- **UT-Battelle, LLC, Oak Ridge - $50,000**
  UT-Battelle, LLC, Oak Ridge received $50,000 to support the development of a more effective composite prepreg tape laying head for manufacturing spar caps on large wind turbine blades.

MODERNIZING THE ELECTRIC GRID – 7 projects totaling $127.1 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): $770,000, Enhancing State and Local Governments' Energy Assurance
Location: Nashville
The Tennessee Department of Economic and Community Development in Nashville received $770,000 for Enhancing State and Local Governments' Energy Assurance. This project focuses on building regional energy assurance capabilities by enhancing inter- and intrastate 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, renewable and biofuels and cities to update or develop Energy Assurance Plans within the local areas. The two sets of funding will be used to hire or retrain staff to build in-house expertise in dealing with Smart Grid technologies, critical energy infrastructure interdependencies and cyber-security.

Award(s): 4 totaling $123 million, Smart Grid Investment Grant Program (EISA 1306)
Location: Statewide

- **Electric Power Board of Chattanooga, Chattanooga - $111.6 million**
  The Electric Power Board of Chattanooga received $111.6 million through the Smart Grid Investment Grant Program to deploy a Smart Grid network, including 170,000 smart meters and grid automation technologies. These upgrades will improve the reliability and efficiency of the electrical grid and help consumers reduce their energy use and save money.

- **Memphis Light, Gas and Water Division, Memphis - $5.1 million**
  Memphis Light, Gas and Water Division in Memphis received $5.1 million through the Smart Grid Investment Grant program to focus on extension of SCADA system throughout the Network.

- **Knoxville Utilities Board, Knoxville - $3.6 million**
  Knoxville Utilities Board in Knoxville received $3.6 million through the Smart Grid Investment Grant program. This project will focus on deployment of an advanced metering infrastructure (AMI) system and Smart Grid communications including DA and SA.

- **UT-Battelle, LLC, Oak Ridge - $2.8 million**
  UT-Battelle, LLC, in Oak Ridge received $2.8 million through the Smart Grid Investment Grant program.

Award(s): $2.4 million, Smart Grid Workforce Training
Location: Chattanooga
The University of Tennessee at Chattanooga received $2.4 million for Smart Grid Workforce Training. This funding enhances undergraduate, graduate and professional education on subjects critical to the successful implementation of the Smart Grid, supplementing traditional electrical engineering training with topics such as Smart Grid, cyber-security, energy efficiency and clean energy, power system protection, power systems and power systems management. It also addresses the needs of

students and teachers by developing programs that can be taught in the high schools on power systems, alternative energy, energy conservation and the Smart Grid with the objective of developing well-trained technicians and pre-engineering students that are knowledgeable in power systems and clean-energy Smart Grid practices.

Award(s): $908,000, State Assistance on Electricity Policies
Location: Nashville
The Tennessee Regulatory Authority in Nashville received $908,000 for State Assistance on Electricity Policies. This project provides funds to be used by states and their Public Utility Commissions 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 Recovery Act.

TRANSPORTATION – 1 project totaling $34.3 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): $34.3 million, Advanced Battery Manufacturing
Location: Bristol
Exide Technologies in Bristol received $34.3 million for Advanced Battery Manufacturing to produce advanced lead-acid batteries using lead-carbon electrodes for micro and mild hybrid applications.

Award(s): $1.6 billion, Advanced Technology Vehicles Manufacturing Program
Location: Smyrna
Nissan North America in Smyrna closed a $1.6 billion loan arrangement under the Department of Energy's Advanced Technology Vehicles Manufacturing program to retool its Smyrna, Tennessee, factory to build advanced electric automobiles and build an advanced battery manufacturing facility. The company estimates the project will create up to 1,300 jobs.

ENVIRONMENTAL CLEANUP – 37 projects totaling $655.7 million

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

Award(s): 2 totaling $588,000, Hanford Central Plateau D&D Recovery Act Project
Location: Oak Ridge
Washington TRU Solutions, LLC, in Oak Ridge received $588,000 for the Hanford Central Plateau D&D Recovery Act Project. These funds are for the purchase of standard waste boxes.

Award(s): 8 totaling $116.5 million, Oak Ridge Defense ORNL D&D Recovery Act Project
Location: Oak Ridge
This Recovery Act project deactivates and demolishes (D&D) surplus contaminated facilities and remediate contaminated soil at the Oak Ridge National Laboratory. The Oak Ridge National Laboratory footprint will be reduced by 63,000 square feet, releasing valuable real estate for

modernization of the Central Campus. In addition, seven acres of solid waste burial grounds will be capped and 320 cubic meters of contaminated soils will be removed and disposed.

- **Bechtel Jacobs Company, LLC, Oak Ridge - $55.4 million**
- **UT-Battelle, LLC, Oak Ridge - $21.4 million**
- **SEC Federal Services Corporation (2), Oak Ridge - $20.7 million**
- **Lata-Sharp Remediation Services, LLC, Oak Ridge - $10.2 million**
- **Professional Project Services, Inc., Oak Ridge – $4.4 million**
- **Oak Ridge Associated Universities, Inc., Oak Ridge - $2.4 million**
- **Navarro Research and Engineering, Inc., Oak Ridge - $2 million**

Award(s): 4 totaling $143.5 million, Oak Ridge Defense TRU Waste Recovery Act Project
Location: Oak Ridge, Lenoir City
This Recovery Act project takes the Transuranic (TRU) Waste Processing Center from a single contact-handled (CH) and remote-handled (RH) operating shift to multiple CH and RH operating shifts. This project will accelerate CH TRU and RH TRU debris processing, completing the total inventory one year earlier than planned.

- **Wastren Advantage, Inc., Oak Ridge - $107.3 million**
  Wastren Advantage, Inc., in Oak Ridge received $107.3 million for the Oak Ridge Defense TRU Waste Recovery Act Project to supervise the waste management activities at the Oak Ridge Transuranic (TRU) Waste Processing Center, enabling a new small business to contribute to environmental cleanup efforts on the Oak Ridge Reservation.

- **Energx TN, LLC, Lenoir City - $35.6 million**
  Energx TN, LLC, in Lenoir City received $35.6 million for the Oak Ridge Defense TRU Waste Recovery Act Project to fund the TRU Waste Processing Center (TWPC). This is anticipated to accelerate by one year or more the completion of processing and disposal for all waste streams anticipated or undergoing processing.

- **Navarro Research and Engineering, Inc., Oak Ridge - $334,000**
  Navarro Research and Engineering, Inc., in Oak Ridge received $334,000 for the Oak Ridge Defense TRU Waste Recovery Act Project to provide expertise required to plan, develop and implement / deploy tools and services for the Oak Ridge Office (ORO) Environmental Management (EM) Safety program. It provides management and technical support to the Oak Ridge Office Assistant Manager of Environmental Management (AMEM) organization in carrying out tasks associated with planning, development and implementation of the ORO EM Safety Program and Integrated Safety Management (ISM) responsibilities.

- **Professional Project Services, Inc., Oak Ridge - $296,000**
  Professional Project Services, Inc., in Oak Ridge received $296,000 for the Oak Ridge Defense TRU Waste Recovery Act Project to support the Department of Energy in Oak Ridge to prepare documentation for projects that demolish facilities, remediate soils and other measures to protect the environment. The project involves preparating basic information about the facilities, determining the cost of demolition or remediation and fashioning that information into a government estimate for use by DOE in evaluating proposals from the private sector.

Award(s): 11 totaling $278 million, Oak Ridge Defense Y-12 D&D Recovery Act Project
Location: Oak Ridge
This Recovery Act project will render the highest risk excess facility at Y-12 (Alpha-5) ready for decontamination and demolition (D&D) by removing all legacy material, remediating the most significant source of mercury contamination to surface water at Y-12, and demolishing five dilapidated, contaminated buildings. The Y-12 footprint will also be reduced by 150,000 square feet.

- **B&W Y-12, Oak Ridge - $223.3 million**
  B&WY- 12 in Oak Ridge received seven payments totaling $223.3 million for the Oak Ridge Defense Y-12 D&D Recovery Act Project. The Alpha 5 Legacy Material Disposition project is a part of the Recovery Act work scope being performed by B&W Y-12. The scope of work for the Alpha 5 Legacy Material Disposition project is to complete removal and disposition of all legacy materials in Building 9201-5 (Alpha 5) and to characterize the facility to prepare for eventual deactivation and decommissioning under the Integrated Facility Disposition Program. The scope of work for this project includes characterization, engineering, waste handling plan / waste profile development, hazardous material abatement, equipment removal, utility isolation, temporary utility installation, waste disposition, D&D of the facilities and preparation of regulatory documentation.

- **Bechtel Jacobs Company, LLC, Oak Ridge - $45.7 million**
  Bechtel Jacobs Company, LLC, in Oak Ridge received $45.7 million for the Oak Ridge Defense Y-12 D&D Recovery Act Project. This project provides for accelerated expansion and upgrades at the Oak Ridge Reservation (ORR) Landfill. The expansion is needed to safely meet increased disposal rates resulting from economic stimulus-funded projects and planned future work. The project includes design and construction activities for landfill disposal space build-outs. The end product will allow efficient disposal at the anticipated increased rates while meeting Tennessee Department of Environment and Conservation permits and prescribed operating plans.

- **Professional Project Services, Inc., Oak Ridge - $7 million**
  Professional Project Services, Inc., in Oak Ridge received $7 million for the Oak Ridge Defense Y-12 D&D Recovery Act Project. The project will support the Department of Energy in Oak Ridge to prepare documentation for projects that demolish facilities, remediate soils and other measures to protect the environment. The project involves preparating basic information about the facilities, determining the cost of demolition or remediation and fashioning that information into a government estimate for use by DOE in evaluating proposals from the private sector.

- **Oak Ridge Associated Universities, Inc., Oak Ridge - $1.6 million**
  Oak Ridge Associated Universities, Inc., in Oak Ridge received $1.6 million for the Oak Ridge Defense Y-12 D&D Recovery Act Project. ORISE represents DOE ORO and provides independent reviews of the Y-12 team developing waste handling plans, associated sampling and analysis plans and waste profiles.

- **Navarro Research And Engineering, Inc., Oak Ridge - $478,000**

Navarro Research and Engineering, Inc., in Oak Ridge received $478,000 for the Oak Ridge Defense Y-12 D&D Recovery Act Project. Navarro will decommission and decontaminate Alpha 5, Beta 2, the Biology Complex and the Old Salvage Yard.

Award(s): 5 totaling $33.4 million, Oak Ridge Non-Defense Recovery Act Project
Location: Oak Ridge

This project demolishes surplus contaminated facilities and remediates contaminated soil at the Oak Ridge National Laboratory. The Oak Ridge National Laboratory footprint will be reduced by 63,000 square feet, releasing valuable real estate. The project will also complete demolition and disposition of surplus facilities at ORNL and legacy material removal and disposition from four buildings in the ORNL Central Campus and Building 2026 Complex.

- **UT-Battelle, LLC, Oak Ridge - $15.6 million**
- **SEC Federal Services Corporation, Oak Ridge - $9.6 million**
- **Oak Ridge Associated Universities, Inc., Oak Ridge - $4.6 million**
- **Professional Project Services, Inc., Oak Ridge - $2.2 million**
- **Navarro Research and Engineering, Inc., Oak Ridge - $1.4 million**

Award(s): 5 totaling $82.2 million, Oak Ridge UE D&D Funded Recovery Act Project
Location: Oak Ridge

This Recovery Act Project is preparing the K-27 Uranium Enrichment (UE) Facility for deactivation and demolition (D&D). The K-27 Building consists of nine building units occupying a 383,000-square foot footprint with over 1.1 million-square feet of total floor area. This work includes removal, segmentation and mining of all high risk equipment and piping, abatement of hazardous material as necessary for removal of high risk components and the management and disposition of wastes generated from the project.

- **Lata-Sharp Remediation Services, LLC, Oak Ridge - $51.8 million**
- **Bechtel Jacobs Company, LLC, Oak Ridge - $25 million**
- **Oak Ridge Associated Universities, Inc., Oak Ridge - $3.1 million**
- **Navarro Research and Engineering, Inc., Oak Ridge - $1.5 million**
- **Professional Project Services, Inc., Oak Ridge - $814,000**

Award(s): $780,000, ORP Recovery Act Project
Location: Oak Ridge

Savannah River Nuclear Solutions in Oak Ridge received $780,000 for the ORP Recovery Act Project. In support of Hanford's tank waste transfer to the Waste Treatment Plant facility, SRNL is performing scaled testing to evaluate the batch consistency of the multi-batch transfer process to be used in transferring the waste.

Award(s): $723,000, Title X Uranium / Thorium Reimbursement Program
Location: Knoxville

The Tennessee Valley Authority in Knoxville received $723,000 for the Title X Uranium / Thorium Reimbursement Program. The goal of this project is to eliminate the government's liability for environmental cleanup at sites that produced uranium and thorium during the Cold War era for DOE and its predecessors. The funding enables the licensees of these sites to accelerate the completion of cleanup programs and eliminate the environmental risks at these sites.

SCIENCE AND INNOVATION – 33 projects totaling $226.6 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): 2 totaling $29.3 million, Advanced Materials RD&D in Support of EERE Needs to Advance Clean Energy Technologies and Energy-Intensive Process R&D
Location: Oak Ridge
UT-Battelle, LLC, received $28.7 million and Battelle Energy Alliance, LLC, received $650,000 for advanced materials RD&D at the Oak Ridge National Laboratory. ORNL performs research to advance clean energy technologies and energy intensive processes. Some of the projects include development and application of processing for nano-composite materials for lithium ion batteries, improving heat recovery in biomass-fired boilers, nanocrystallization of licoo2 cathodes for thin film batteries and conversion of biomass into second-generation biofuels.

Award(s): $2.5 million, Advanced Computer Architectures
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $2.5 million for Advanced Computer Architectures to create the next generation computing systems capable of addressing critical national problems in alternative energy strategies, climate change and national security. By funding individual research projects, this initiative engages industry and universities in R&D efforts to directly address technological and architectural barriers, using key scientific applications to guide the design.

Award(s): $5.4 million, Bioenergy Research Center Capital Equipment
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $5.4 million for Bioenergy Research Center Capital Equipment. This funding will support accelerated Poplar screening and analysis.

Award(s): $3.8 million, Computational Partnerships (SciDAC-e)
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $3.8 million for the Computational Partnerships (SciDAC-e) program. This project provides funds for a one-time stimulus of research efforts in applied mathematics and 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 developing Smart Grids.

Award(s): $935,000, Concentrating Solar Power
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $935,000 for concentrating solar power. This project involves thermochemical energy storage for Stirling Concentrating Solar Power. It will develop thermochemical energy storage for dish-based CSP systems. If successful, this could double the number of hours these systems can generate electricity and result in a 20 percent reduction in the cost of solar-generated electricity, making it competitive for intermediate-load power generation.

Award(s): $180,000, DIII-D Facility Upgrades
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $180,000 for DIII-D Facility Upgrades. This project provides a one-time infrastructure upgrade and modernization program for the DIII-D National Fusion Facility located at General Atomics in San Diego, California. The project upgrades the auxiliary heating systems, power systems, core and edge diagnostics and supports new short term postdoctoral research positions for the added diagnostic capability. The additional research capabilities enabled by this project will accelerate the advancement of understanding in plasma science, fusion science, and fusion technology - the knowledge base needed for an economically and environmentally attractive fusion energy source.

Award(s): 2 totaling $22.5 million, Energy Sciences Fellowships and Early Career Research Program
Location: Oak Ridge
This project is to create graduate, post-doctoral and early career fellowship awards to stimulate research careers in energy, environmental and climate change sciences.

- **Oak Ridge Associated Universities, Inc., Oak Ridge - $12.5 million**
  Oak Ridge Associated Universities, Inc., in Oak Ridge received $12.5 million for the Department of Energy (DOE) Office of Science Graduate Fellowship (SCGF) program, which supports graduate students pursuing degrees in areas of research supportive of the SC mission.

- **UT-Batelle, LLC, Oak Ridge - $10 million**
  UT-Batelle, LLC, in Oak Ridge received $10 million for the Energy Sciences Fellowships and Early Career Research Program. This funding involves the origin of superconductivity in structurally layered materials.

Award(s): $2.2 million, Enhance and Accelerate FEMP Service Functions to the Federal Government
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $2.2 million to Enhance and Accelerate FEMP Service Functions to the Federal Government. This program provides technical assistance for federal agencies.

Award(s): $2.5 million, Enhanced AIP Funding at NP User Facilities
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $2.5 million for Enhanced AIP Funding at NP User Facilities. Accelerator Improvement Projects (AIP) at NP facilities enhance operations of the facilities and contribute to the support of scientific research and the training of the next generation of nuclear scientists.

Award(s): 4 totaling $3.8 million, Enhanced Geothermal Systems (EGS) Technology R&D
Location: Oak Ridge
Oak Ridge National Laboratory in Oak Ridge received $3.8 million for EGS R&D. This project funds R&D programs to support Enhanced Geothermal Systems (EGS). EGS R&D reduces the technical risks of creating and managing EGS reservoirs and provides the tools to maintain high well production rates with low thermal drawdown, which in turn will encourage the private sector to exploit EGS technology for commercial-scale deployment.

Award(s): $600,000, Fundamental Neutron Physics Beamline MIE at SNS
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $600,000 for the Fundamental Neutron Physics Beamline MIE at SNS. This allows for the acceleration of two major efforts that are part of the overall FNPB external experimental building. The FNPB project is a beam-line at the Spallation Neutron Source (SNS) at Oak Ridge National Laboratory (ORNL) that delivers record peak currents of cold and ultra-cold neutrons for studying the fundamental properties of the neutron, leading to a refined characterization of the weak force. The HVAC and utilities are required for research to be carried out in the FNPB external experimental building.

Award(s): 2 totaling $715,000, Fundamental Research in Key Program Areas
Location: Oak Ridge and Antioch

- **Oak Ridge National Laboratory, Oak Ridge - $710,000**
  Oak Ridge National Laboratory in Oak Ridge received $710,000 for Fundamental Research in Key Program Areas. This project involves Short Rotation Woody Biomass.

- **Fuelscience, LLC, Antioch - $5,000**
  Fuelscience, LLC, in Antioch received $5,000 for technical review of proposals for biomass conversion consortia.

Award(s): $10 million, General Plant Project Funding
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $10 million for General Plant Project Funding. This project will help revitalize the Oak Ridge National Laboratory (ORNL) by accelerating funding for non-line item capital improvements to facilities and infrastructure, including electrical upgrades, roofing, fire safety, space renovation, and transformer replacements. These improvements will reduce the laboratory's backlog of general infrastructure needs, ensuring improved readiness to perform mission work.

Award(s): $1.4 million, Industrial Assessment Centers and Plant Best Practices
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $1.4 million to complete new and enhanced Save Energy Now (SEN) assessments and to complete technical assistance activities to support SEN assessments.

Award(s): $250,000, Infrastructure Improvements for General Plasma Science User Facilities
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $250,000 to provide improvements in infrastructure including hardware, upgraded diagnostics, new probes, improved data acquisition and analysis, which will enhance the scientific contributions of General Plasma Science (GPS) projects.

Award(s): $9.2 million, Investigation of Intermediate Ethanol Blends, Optimization of E-85 Engines, and Development of Transportation Infrastructure
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $9.2 million for the Investigation of Intermediate Ethanol Blends, Optimization of E-85 Engines and development of transportation infrastructure. This project

accelerates testing efforts of intermediate ethanol blends (E15 and E20) on additional vehicle and engine types. The project also provides data to create a defensible position on the effect of intermediate blends to address the blend-wall issue.

Award(s): $3.2 million, Knowledgebase R&D
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $3.2 million for Knowledgebase R&D. This project provides funding for the conceptual design and implementation planning necessary to develop the Systems Biology Knowledgebase, a cyber-infrastructure for systems biology information and data that includes data retrieval and enables new knowledge acquisition and management.

Award(s): $55 million, Lab Call for Facilities and Equipment
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $55 million for Lab Call for Facilities and Equipment. This funding will help develop a Carbon Fiber Technology Center: a new 20,000-25,000 sq. ft. building that will house an 80 ton / year thermal conversion line and a 145 ton / year melt-spining line. ORNL will build an Integrated Net-Zero Energy Buildings Research Laboratory.

Award(s): $19.9 million, Leadership Computing Upgrade
Location: Oak Ridge
UT-Battelle, Inc., in Oak Ridge received $19.9 million for the Leadership Computing Upgrade program. This project funds equipment upgrades for the Innovative and Novel Computational Impact on Theory and Experiment (INCITE) program at the Leadership Computing Facility (LCF) at Oak Ridge. Recovery Act funds will be used to replace the four-core AMD Barcelona processors with six-core AMD Istanbul processors.

Award(s): $5.8 million, Nanoscale Science Research Centers
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $5.8 million for the Nanoscale Science Research Centers program. The DOE Nanoscale Science Research Centers (NSRC) user facilities provide capabilities to fabricate, characterize, assemble and integrate complex nanostructures. Funding is used to replenish original equipment and acquire new tools.

Award(s): $500,000, National Accounts Acceleration in Support of the Commercial Buildings Initiative
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $500,000 to substantially reduce energy consumption in the commercial real estate sector by creating, testing and validating design concepts and providing technical assistance to commercial building owners and operators.

Award(s): $4.4 million, Nuclear Science Workforce
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $4.4 million for the Nuclear Science Workforce program. This Recovery Act project supports proposals for initiatives in Applications of Nuclear Science and Technology, aimed at research and development activities in nuclear science.

Award(s): 5 totaling $1 million, OSTI Technology Infrastructure

Location: Oak Ridge
This project is for a one-time enhancement of facility operations needed to upgrade and strengthen the technology backbone by which DOE enables public and scientific community access to the results of its R&D investment. These enhancements include a redundant internet pathway and a live alternate processing site capable of handling the expected traffic and hosting of the Office of Scientific and Technical Information (OSTI) scientific dissemination services.

- **Information International Associates, Inc., Oak Ridge - $850,000**
- **DST Data Products, LLC (2), Oak Ridge - $154,000**
- **Shields Electronics Supply, Inc. (2), Oak Ridge - $12,000**

Award(s): $4.6 million, Residential Buildings (Building America, Builders' Challenge, and Existing Home Retrofits)
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $4.6 million for Battelle Memorial Institute in Richland for the Residential Buildings program. This program focuses on the completion of Energy Savings retrofits, as well as targeted consumer education and outreach campaigns.

Award(s): $60.6 million, SLI Construction
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $60.6 million for SLI Construction. This project accelerates the Science Laboratories Infrastructure (SLI) initiative to revitalize laboratory infrastructure that includes 35 projects across all ten science laboratories to be completed in the next ten years. This funding will go to UT-Battelle, LLC, for the specific project at Oak Ridge National Laboratory which includes construction of a new facility for research in materials and chemical sciences.

Award(s): $150,000, Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Round 1
Location: Knoxville
Analysis And Measurement Services Corporation in Knoxville received $150,000 through the SBIR / STTR program to develop a holistic approach for in-situ cable condition monitoring in nuclear power plants.

Award(s): $1.2 million, Solid State Lighting
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $1.2 million for solid-state lighting outreach to large retail partners for an 18-month program. The key components of the outreach include cooperative marketing support, expansion of the Lighting Facts website, product testing and analysis, and monitoring and reporting of program results.

Award(s): $6.8 million, Transportation Electrification
Location: Oak Ridge
UT-Battelle, LLC, in Oak Ridge received $6.8 million for Transportation Electrification. Oak Ridge National Laboratory will develop and establish a solar-recharge prototype system for pilot deployment and evaluation on a portion of a 900 battery electric vehicle (BEV) fleet in Tennessee and work with system integrator(s) to engineer a replicable design package that is compatible with other deployed public recharge systems.

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KNOXVILLE

Wind power reliability: breaking down a barrier

EnerNex Corporation is developing documentation and validating generic wind turbine and plant models that test reliability. | File photo

The steady increase of wind power on the grid presents new challenges for power system operators charged with making sure the grid stays up and running.

"We need to ensure that we are going down a path that will lead to better reliability," said Bob Zavadil, an executive vice president at EnerNex Corporation in Knoxville, Tenn., a firm specializing in renewable energy grid interconnection and integration. "If this piece isn't done, there will be problems."

EnerNex has spent the last decade perfecting wind turbine and plant models that test a wind plant's influence on the grid and its ability to provide grid support. In its latest effort, the company is using American Reinvestment and Recovery Act funds worth $750,000 from the Department of Energy to develop documentation and validations of computer wind turbine models.

These tools are used to evaluate the influence of a wind plant's power fluctuations - caused by wind speed changes - on the grid. The work could lead to technical grid connection requirements and help break down one of the many barriers in bringing on more wind power: reliability.

Preparing for more energy

The North American Electric Reliability Corporation (NERC), an organization that seeks to ensure reliability of the North American bulk power system, notes that wind, solar and hydropower are considered "variable" sources of energy. Wind and the sun are not constant and could produce fluctuations in plant outputs.

Knowing exactly how wind plants affect the grid and its ability to withstand disturbances, like the 3,500-MW outage in 2003, is key to keeping power flowing.

As the electric industry seeks to integrate large amounts of variable generation into the grid, "considerable effort will be needed to effectively manage their unique operating and planning characteristics to ensure bulk power system reliability," said Mark Lauby, director of NERC's Reliability Assessment and Performance Analysis.

To address some of these issues, NERC formed a Wind Generator Task Force in December 2004, asking Zavadil, who has been in the power industry for more than 30 years, to serve as a member.

"The blackout was a driving force to create the task force," said Zavadil. It got many people thinking about the growing increase of new energy and its reliability, he added.

Three years later, they formed the Integration of Variable Generation Task Force to lay out recommendations for more integration.

The need for standardized wind models, something EnerNex had been working on, was identified as a high priority in NERC's task report in 2009, titled "Accommodating High Levels of Variable Generation."

"Most transmission planning engineers in the U.S. recognize that proper computer models for wind turbines and plants are a vital and urgent need," Zavadil said. "On the present course, it would take another five to 10 years to accomplish something we hope to do with this project in just two years."

Making the transition easier

The goal of EnerNex's Recovery-Act funded project is to accelerate the appropriate use of wind turbine and plant models across the country. The standardized models could be applied to all wind power systems to test reliability.

Zavadil says an outreach effort will begin next year about the models to engage the transmission organizations that expect to generate power using wind technology.

When asked if his company's efforts will help bring more wind energy to the grid, Zavadil said there are many factors that come into play, including policy and the economy. "However," he said, "[the models] will remove one of the barriers."

DuPont Danisco Cellulosic Ethanol (DDCE) opened a new biorefinery in Vonore, Tenn., last year. | Photo courtesy of DDCE

VONORE

New Vonore biorefinery makes biofuel from corncobs and switchgrass

Energy crops and agricultural residue, like corncobs and stover, are becoming part of rural America's energy future. Unlike the more common biofuel derived from corn, these are non-food/feed based cellulosic feedstocks, and the energy content of the biomass makes it ideal for converting to sustainable fuel.

Last January in Vonore, Tenn., DuPont Danisco Cellulosic Ethanol (DDCE) opened a new biorefinery with the goal of producing at large-scale biofuel from cellulosic feedstock, beginning with corncobs and stover and moving to switchgrass.

How biofuels are created

The basic structure of cellulosic feedstock- which includes plants like switchgrass and cornstover- can be broken down into component sugars for conversion to ethanol for fuel. When biomass enters the conversion process, it is pretreated to make the cellulose accessible. Using enzymes, the cellulose is converted into component sugars. These sugars are fermented and distilled into fuel grade ethanol.

The Department of Energy's Role in the University of Tennessee Biofuels Initiative (UTBI):

- Approximately $5 million awarded to Genera Energy for switchgrass harvest, collection, storage and delivery to the Vonore facility.
- Approximately $2.3 million awarded to the University of Tennessee for establishment of an additional 3,000 acres of improved variety switchgrass.
- Support of Oak Ridge National Laboratory in collecting environmental sustainability data associated with the UTBI switchgrass trials.

DDCE, along with partners University of Tennessee Biofuels Initiative, Genera Energy and the state of Tennessee are working to establish a several-thousand-acre switchgrass crop for the biorefinery.

The crop—planted in 2008—will reach maturity later this year. DDCE plans on running these switchcrop through the Vonore biorefining facility to test the process on a large scale. DDCE is planning to build a commercial scale biorefinery in the Midwest for corn stover, and when the technology is ready for switchgrass, will also begin large-scale production of fuel from that crop.

"The science is ready, and the process works. Now, in Tennessee, we are scaling it up so that we can produce ethanol in 50-million-gallon facilities," says Jennifer Hutchins, director of communication at DDCE. "The goal is to deliver technology to produce cellulosic ethanol that will compete with gasoline."

Creating value from farm to tank

DDCE's partnership with the University of Tennessee and Genera Energy came about through the University of Tennessee Biofuels Initiative, a farm-to-fuel business plan. Genera Energy establishes and supports the contracted farmers growing the crops.

There are currently around 2,600 acres of switchgrass growing on more than 30 farms within 50 miles of the Vonore facility under this initiative, generating economic opportunities for the region. DDCE and Genera hope within the next few years, the area will begin to see the economic impact on rural development.

"The world should be watching what we're doing in Tennessee, because it is an example of how we will create value across the entire supply chain - from the farm to the tank," says Joe Skurla, CEO of DDCE. "These projects require collaboration between farmers, crop developers, technology experts, producers and fuel suppliers to deliver investment-grade solutions and low-cost, sustainable transportation fuel for consumers."

From operators to management, jobs will be created

DDCE, which today employs nearly 30 people, has been expanding its workforce and expects to contribute to rural economic development and jobs growth as the industry evolves.

"As we develop technology, we add people. We are adding jobs in both our demonstration facility in Tennessee—operators, engineers and technicians—and employees at our headquarters in Illinois in commercial development and management," Hutchins says. "These are all green jobs."

DDCE plans to license its technologies and will also engage in building commercial scale biorefineries, which will employ 50-60 people each. "There's opportunity not just for direct job growth, but to contribute to growth across many sectors, from research to farming to equipment manufacturing and biomass logistics," Hutchins says. "As the industry evolves, we hope it will contribute to rural economic development."

"It is an example of how we will create value across the entire supply chain - from the farm to the tank."

- Joe Skurla

Maryville

Solar thermal water-heating system helps justice center cut costs

A solar thermal water-heating system at the justice center in Maryville, Tenn., is helping to reduce energy consumption and cut costs for Blount County.

Funded by $300,000 of the $501,600 Energy Efficiency and Conservation Block Grant (EECBG) awarded to Blount County through the Recovery Act, the solar thermal water-heating system will retrofit the detention facility's existing gas-powered water-heating system. Specifically, the solar thermal water-heating system will serve kitchen and laundry machines at the center. Power for the renewable energy source will come from a solar panel array that will be installed on the center's roof starting in September.

For Blount County, the project should result in big savings. "This will definitely bring in taxpayer savings," says Dana West, grants administrator for Blount County. "Installing the new water-heater will lower natural gas and electric bills because of less fossil fuel based energy that will be used at the justice center."

In addition, West says that six new temporary construction jobs will be created out of the EECBG-funded project.

The solar thermal water-heating system is only one part of Blount County's greater goal of becoming more environmentally conscious. Funding will also be used for several other projects, including an occupancy-sensor lighting retrofit in county buildings and elementary school energy educational outreach. West will personally visit second grade classrooms to educate more than 950 students on the benefits of everyday recycling and energy savings.

"This grant is very important because it allows us to approve projects that wouldn't otherwise be at the top of our priority list and saves the county taxpayers money," West says.

Chattanooga

David Crockett, Chattanooga's Green Frontiersman

David Crockett is no stranger to Chattanooga, Tennessee. A three-term city councilman, former chairman of the council and President of the Chattanooga Institute for Sustainability, he knows his way around the city government.

The issue of sustainability has become our central strategy for everything.

- David Crockett

His experience with local government, combined with his passion for the environment made him the choice to head up Chattanooga's new Office of Sustainability. As the director for the new office, Crockett works with 12 task forces on everything from urban food production to green infrastructure.

The city of Chattanooga created the sustainability director position through funds awarded from the U.S. Department of Energy's Energy Efficiency and Conservation Block Grant (EECBG), which is part of the American Reinvestment and Recovery Act.

"When the mayor asked me to suit back up and do this, I was excited," he says.

According to Crockett, the Office of Sustainability will help Chattanooga be aggressive about clean energy and sustainability - in a time of fiscal constraint in local government.

"It's a tough environment for cities across America…we're in a time where cities have to cut departments and resources," Crockett says.

"Thanks to these grants, we were able to add an office. These grants empower cities and counties to do things for energy efficiency and other issues that they might not be able to do in this economic climate."

Environmental history

Throughout his adult life, when he wasn't working full time in the software industry, in city council meetings or spending time with his family, Crockett devoted time to educating fellow citizens about the environment. He says his environmentalism stems back to the 1970s, when Chattanooga was a very different place.

"We were one of the most polluted cities in America. It was like we had a heart attack. We had to address everything that was wrong with the city: the economy, environment, social problems," Crockett says.

Through his commitment and work for the city, Crockett began to shape and form an understanding of what sustainability meant for Chattanooga and cities abroad.

"When you start working on everything, you begin to intuitively understand what sustainability means. All of these things—energy, transportation, storm water, pollution, education, housing, economic development— are connected, and they all affect each other. You have to look at each of the strategies in the context of everything."

In the last 30 years, with support from city council and citizens, Chattanooga has really turned around. In the 1990s, the city received a battery-powered bus fleet to transport Chattanoogans downtown free of charge, and festivals and fairs attract thousands of people to the Chattanooga riverfront, an area that was inaccessible 20 years ago.

"The issue of sustainability has become our central strategy for everything," Crockett says.

Sustainability steps

The major initiatives of the Office of Sustainability include establishing an energy office to audit and retrofit city buildings.

The office plans to establish an advanced support center with software to support analysis of water, gas and electricity use for the entire county's residential, business, government and non-profit facilities.

The office is also assessing storm water management, and the correlation between water and energy management.

"These are permanent things that will get immediate savings," Crockett says. "In the future, we'll rely on these savings to help fund our office."

Another major project that Crockett will work on is the "No Roof Left Unused" initiative, which encourages companies to install green roofs, solar systems or micro wind turbines on rooftops.

Crockett has worked all over the country and around the world with CitiStates and other organizations. But, for Crockett, there's nothing like working in Chattanooga.

"Working around the world is fun, but there's nothing more challenging and gratifying than doing it in your own home town," Crockett says. "A lot of cities say we want to be the BEST, we want to be the greenest. Sure, we'd like to be the best, but it's more important for Chattanooga to be a good partner and example for other cities."

Crockett hopes that Chattanooga will be a resource for other cities looking to become more sustainable. "We look at sustainability as a collaborative process, not a competitive process. That's our mission, to help other cities be their best while doing the best we can. I guess you could say that we're not trying to be Miss America, we're happy being Miss Congeniality."

KNOXVILLE

Energy deal to net big savings for taxpayers

Knoxville, Tenn., will save millions of dollars and reduce its energy consumption and carbon emissions thanks to a $19 million deal with Massachusetts-based energy services company Ameresco.

The project is structured as an Energy Services Performance Contract, which means that the energy savings realized by the city will fully pay for the cost of the upgrades.

The city plans to upgrade 99 of its buildings, as well as 37 athletic fields and three public golf courses, by installing energy efficient lighting and solar panels, increasing water conservation efforts, making HVAC improvements and replacing boilers, among other things. The improvements are expected to save the city an average of $1.5 million a year in utility costs, and those savings will be used to pay off the upgrades. That will save taxpayer money in the long run and pay off the $19 million project in fewer than 15 years.

Knoxville's energy improvements are expected to save the city $1.5 million a year in utility costs | Photo courtesy of the City of Knoxville

Because Knoxville was designated a DOE Solar America City in 2008, city leaders are particularly excited that the contract provided an opportunity to install a large solar photovoltaic array atop the Knoxville Convention Center.

"It'll be very visible in the downtown area, which is good for raising awareness about solar energy, a key goal of our Solar America Cities Program" Erin Burns, Knoxville's sustainability coordinator, says. "It's also a great symbol of how well the Ameresco project allowed us to achieve significant energy savings and upgrades without a lot of financial risk and up-front cost."

In addition to the contract with Ameresco, Knoxville also received a $2 million Energy Efficiency and Conservation Block Grant through the Recovery Act. Part of that funding that will be used for other upgrades Ameresco's initial energy audits had suggested but for which the city otherwise wouldn't have had the money.