

Department of EnergyRecovery Act State Memos

New Mexico



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.

TABLE OF CONTENTS

RECOVERY ACT SNAPSHOT 1
UNDING ALLOCATION TABLE 2
NERGY EFFICIENCY
RENEWABLE ENERGY
LECTRIC GRID
RANSPORTATION
ARBON CAPTURE & STORAGE
NVIRONMENTAL CLEANUP
SCIENCE AND INNOVATION
RECOVERY ACT SUCCESS STORIES – ENERGY EMPOWERS
 New Mexico brightens lights to save money



American Recovery and Reinvestment Act



U.S. DEPARTMENT OF ENERGY • NEW MEXICO RECOVERY ACT SNAPSHOT

Funding for selected DOE projects: \$609.2 million

DOE Recovery Act projects in New Mexico: 95

Clean energy tax credits and grants: 4

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

New Mexico has substantial natural resources, including oil, gas, solar, wind, geothermal, 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 New Mexico are supporting a broad range of clean energy projects, from energy efficiency and the smart grid to wind and solar, geothermal and hydro, biofuels and nuclear, as well as a major commitment to cleaning up the Cold War-legacy nuclear sites in the state. Through these investments, New Mexico's businesses, universities, non-profits, and local governments are creating quality jobs today and positioning New Mexico to play an important role in the new energy economy of the future.

EXAMPLES OF NEW MEXICO FORMULA GRANTS

Program

State Energy Program

Weatherization Assistance Program

Energy Efficiency Conservation Block Grants

Energy Efficiency Appliance Rebate Program

Award (in millions) \$31.8

The New Mexico Minerals & Natural Resources has received \$31.8 million in State Energy Program funds to invest in state-level energy efficiency and renewable energy priorities.

\$26.9

The State of New Mexico has Department of Energy, received \$26.9 million in Weatherization Assistance Program funds to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions, and saving money for New Mexico's low-income families. Over the course of the Recovery Act, New Mexico expects to weatherize nearly 2,800 homes. The program also includes workforce training and education as part of the state's efforts to develop a green workforce.

\$22.4

Forty-two communities in New Mexico have received a total of \$22.4 million for Energy Efficiency and Conservation Block Grants (EECBG) to develop, promote, implement, and manage local energy efficiency programs.

\$1.9

The New Mexico Department of Energy, Minerals & Natural Resources has received \$1.9 million for the Energy Efficient Appliance Rebate Program, which offers consumer rebates for purchasing certain ENERGY STAR® appliances. These energy efficient appliances reduce energy use and save money for families, while helping the environment and supporting the local economy.

EXAMPLES OF NEW MEXICO COMPETITIVE GRANTS AND TAX CREDITS

\$152.8 million

Washington Tru Solutions, **LLC** in Carlsbad was awarded \$152.8 million through the **Waste Isolation Pilot Project** (WIPP). The funds will accelerate the cleanup of transuranic waste in New Mexico and across the country.

\$223.6 million

Los Alamos National Laboratory is receiving \$223.6 million for environmental cleanup operations at the site, which will include soil and groundwater cleanup and decontaminating and decommissioning excess nuclear facilities.

\$53.6 million

High Lonesome Mesa, LLC has received a 1603 payment for renewable energy generation for \$53.6 million for a wind generation project.

\$50 million

Sapphire Energy, Inc. in Columbus was awarded \$50 million for the **Modify Integrated Biorefinery Solicitation** Program for Pilot and **Demonstration Scale** Biorefineries. Sapphire Energy will cultivate algae to be converted into green fuels.

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	\$26.9
	State Energy Program (F)	1	\$31.8
	Energy Efficiency and Conservation Block Grant (F)	42	\$22.4
	Energy Efficient Appliance Rebate (F)	1	\$1.9
	TOTAL Energy Efficiency	45	\$83.0
	Solar(CM)	3	\$8.8
Renewable	Wind (CM)	2	\$0.4
Energy	Geothermal (CM)	1	\$5.0
0,	Additional Programs (F & CM)	1	\$4.6
	TOTAL Renewable Energy	7	\$18.8
	Smart Grid Investment and Demonstrations Project (CM) ³	2	\$1.8
Electric Grid	State and Local Energy Assurance and Regulatory Assistance (F)	2	\$1.2
	TOTAL Electric Grid	4	\$3.0
Transportation	Advanced Fuels (CM)	1	\$50.0
Transportation	TOTAL Transportation	1	\$50.0
	CCS Projects (CM)	2	\$0.3
Carbon Capture	Geologic Characterization Projects (CM)	1	\$0.2
and Storage	Research and Training (CM)	1	\$1.0
	TOTAL Carbon Capture and Storage	4	\$1.5
Environmental Cleanup	Environmental Management Contracts (C)	10	\$398.2
	TOTAL Environmental Cleanup	10	\$398.2
	Energy Frontier Research Centers (CM)	2	\$3.4
Science and Innovation	National Laboratory Facilities (C)	20	\$39.7
Science and innovation	Additional Programs	2	\$13.2
	TOTAL Science and Innovation	24	\$54.7
TOTAL - DOE Programs ⁴		95	\$610.8
Tax Credits/	Payments for Renewable Energy Generation in Lieu of Tax Credits (1603)	2	\$53.7
Programs ⁵	Clean Energy Manufacturing Tax Credits (48C)	2	\$5.1
	TOTAL Tax Incentives	4	\$58.8
TOTAL - DOE/Treasury + DOE			\$669.6
¹ F=Formula Grant, CM=Competi	tive Grant, C=Contract		
² "Selected" indicates DOE has so necessarily indicate that a final a	elected a potential funding recipient, which begins the process of negotial greement has been reached.	ting an agreement.	This does not
³ Projects may cross state bound			
⁴ Total does not include administr	ative funds.		
5Jointly administered by DOE and	d the U.S. Department of Treasury.		

ENERGY EFFICIENCY – 45 projects totaling \$83 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): \$26.9 million, Weatherization Assistance Program (WAP) Location: Statewide

New Mexico received \$26.9 million in Weatherization Assistance Program funds to increase existing weatherization efforts in the state, create jobs, reduce carbon emissions and save money for New Mexico's low-income families. Over the course of the Recovery Act, New Mexico's goal is to weatherize nearly 2,800 homes. The program also includes workforce training and education as part of the state's efforts to develop a green workforce.

Award(s): \$31.8 million, State Energy Program (SEP)

Location: Statewide

The New Mexico Department of Energy, Minerals & Natural Resources received \$31.8 million in State Energy Program funds to invest in state-level energy efficiency and renewable energy priorities. This project enhances existing funding programs for state-level energy efficiency program grants to support 25 percent energy efficiency improvements by 2012. The project helps fund \$8 billion in shovel-ready projects which can be implemented quickly and effectively.

Award(s): 42 totaling \$22.4 million, Energy Efficiency and Conservation Block Grant Program (EECBG)

Location: Statewide

Recipients: Albuquerque, Alamogordo, Carlsbad, Farmington, Clovis, Bernalillo County, Grant County, Dona Ana County, New Mexico Energy, Minerals & Natural Resources Department, Hobbs, Jicarilla Apache Tribe, Las Cruces, McKinley County, Mescalero Apache Housing Authority, Picuris Pueblo Indian Tribe, Pueblo De Cochiti Housing Authority, Pueblo Laguna, Pueblo Of Acoma, Pueblo Of Isleta, Pueblo Of Jemez, Pueblo Of San Felipe, Pueblo Of Sandia, Pueblo Of Zia, Rio Arriba County, Rio Rancho, Roswell, San Juan Pueblo Tribal Council, San Juan County, Sandoval County, Santa Ana, Santa Fe, Santa Fe County, Santo Domingo Tribe (Pueblo), Taos County Clerk, Taos, Tesuque Pueblo Administration, Valencia County, Zuni, Pueblo Of Laguna, Pueblo Of Nambe, Pueblo Of San Ildefonso, Pueblo Of Santa Clara

Forty-two communities in New Mexico received a total of \$22.4 million for the Energy Efficiency and Conservation Block Grants Program (EECBG) to develop, promote, implement and manage local energy efficiency programs.

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

• City of Santa Fe - \$782,000

The City of Santa Fe received \$782,000 in EECBG funding. Eighty percent of the funding is budgeted for energy efficiency improvements identified in energy audits. The remaining 20 percent is budgeted for renewable energy projects and community programs. The funding is reducing the city's greenhouse gas emissions by an expected 503 tons and decreasing energy bills by about \$47,000 per year in addition to creating eleven new jobs.

Award(s): \$1.9 million, Energy Efficient Appliance Rebate Programs Location: Statewide

The New Mexico Department of Energy, Minerals & Natural Resources received \$1.9 million for the Energy Efficient Appliance Rebate Program, offering consumer rebates for purchasing certain ENERGY STAR® appliances. These energy efficient appliances reduce energy use and save money for families, while supporting the local economy. This funding assists state-level rebate programs by paying up to 50 percent of the administrative costs of establishing and executing these types of programs. Though states and territories determine the appliances which apply, typically those include clothes washers, dishwashers, refrigerators, freezers, room air conditioners and water heaters.

RENEWABLE ENERGY – 11 projects totaling \$77.6 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): 2 payments totaling \$53.7 million from DOE / Treasury, 1603 Payments for Renewable Energy

Location: Willard, Albuquerque

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

- High Lonesome Mesa, LLC, Willard \$53.6 million
 High Lonesome Mesa, LLC, received \$53.6 million for a wind generation project.
- SCHOTT Solar, Inc., Albuquerque \$60,000 SCHOTT Solar, Inc., in Albuquerque received \$60,000 for a solar electricity project.

Award(s): 2 totaling \$5.1 million from DOE / Treasury, Clean Energy Manufacturing Tax Credit (48C) Location: Albuquerque, Santa Teresa

• Sumco Phoenix, Albuquerque - \$2.7 million

Sumco Phoenix in Albuquerque received \$2.7 million to manufacture and shape silicon solar blocks. These silicon blocks will be sent for further processing into solar wafers and sold to solar equipment manufacturers. The resulting technologies aid the domestic solar technologies manufacturing industry.

Johnson Plate & Tower Fabrication, Inc., Santa Teresa - \$2.4 million
 Johnson Plate & Tower Fabrication, Inc., in Santa Teresa received \$2.4 million to establish and design a facility to manufacture commercial wind towers. The facility will produce property

which will eventually become Specified Advanced Energy Property used in wind-energy generation projects.

Award(s): \$6.7 million, High-Penetration Solar Deployment Location: Albuquerque

Sandia Corporation in Albuquerque received \$6.7 million for Distributed Energy Technology Lab refurbishment to create additional space to conduct internal and industry-partnered R&D.

Award(s): \$4.6 million, Hydroelectric Facility Modernization Program Location: Abiquiui

The County of Los Alamos received \$4.6 million for the Hydroelectric Facility Modernization Program. The funds are being used to add a low-flow turbine generator to its existing 14MW facility, allowing the dam to operate when releases are below or above the capacity of the two existing turbines.

Award(s): 2 totaling \$2.1 million, Photovoltaic (PV) Systems Development Location: Los Alamos, Albuquerque

Los Alamos National Security, LLC, Los Alamos - \$2 million Los Alamos National Security, LLC, in Los Alamos received \$2 million for Photovoltaic (PV) Systems Development.

• Optomec, Inc., Albuquerque - \$150,000

Optomec, Inc., in Albuquerque received \$150,000 for Photovoltaic (PV) Systems Development. Funds are being used to enhance an existing non-contact printing mechanism to support fully printed fine-feature collector lines on the front surface of crystalline silicon solar cells.

Award(s): \$5 million, Validation of Innovative Exploration Technologies Location: Jemez Pueblo

The Pueblo of Jemez received \$5 million for Validation of Innovative Exploration Technologies. These funds are being used to locate and drill two exploration wells. These wells will be used to define the nature and extent of the geothermal resources on the Jemez Pueblo in the Indian Springs area.

Award(s): 2 totaling \$366,000, Wind Energy Technology R&D and Testing Location: Las Cruces

New Mexico State University, Las Cruces - \$273,000

New Mexico State University in Las Cruces received \$273,000 to support the investigation of short circuit models for wind turbine generators.

• Sandia Corporation, Albuquerque - \$94,000

Sandia Corporation in Albuquerque received \$94,000 for Wind Energy Technology R&D and Testing.

MODERNIZING THE ELECTRIC GRID – 4 projects totaling \$3 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): \$382,000, Enhancing State and Local Governments' Energy Efficiency Location: Santa Fe

The New Mexico Energy, Minerals & Natural Resources Department in Santa Fe received \$382,000 for Enhancing State and Local Governments' Energy Efficiency. This funding is being used to improve state emergency preparedness plans and ensure quick recovery and restoration from any energy supply disruptions. Funds are being used by state governments to hire or retrain staff and expand state-level capacities to address challenges to the country's energy systems, including emergency situations such as blackouts, hurricanes, ice storms and disruptions to heating supplies.

Award(s): \$6,000, Smart Grid Investment Grant Program (EISA 1306) Location: Albuquerque

Sandia Corporation in Albuquerque received \$6,000 to provide technical assistance to the Office of Electricity Delivery and Energy Reliability.

Award(s): \$1.8 million, Smart Grid Regional and Energy Storage Demonstration Project (EISA 1304) Location: Albuquerque

Public Service Company of New Mexico received \$1.8 million for Smart Grid Regional and Energy Storage Demonstration Project. Funds are being used to demonstrate a 2.8MWh Zinc-Bromine flow battery with a 500kW solar PV installation. The goal is to employ the battery, along with a sophisticated control system, to turn solar PV into a reliable dispatchable distributed generation resource.

Award(s): \$801,000, State Assistance on Electricity Policies Location: Santa Fe

The New Mexico State Public Regulation Commission in Santa Fe received \$801,000 to fund states and their Public Utility Commissions (PUCs) to hire staff trained to facilitate the review of timesensitive requests approving electric utility expenditures undertaken as part of the Recovery Act.

TRANSPORTATION - 1 project totaling \$50 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): \$50 million, Modify Integrated Biorefinery Solicitation Program for Pilot and Demonstration Scale Biorefineries

Location: Columbus

Sapphire Energy, Inc., in Columbus received \$50 million for the Modify Integrated Biorefinery Solicitation Program for Pilot and Demonstration Scale Biorefineries. Sapphire Energy is cultivating algae to be converted into green fuels.

CARBON CAPTURE & STORAGE – 4 projects totaling \$1.5 million

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

Award(s): 2 totaling \$322,000, Industrial Carbon Capture and Storage Applications Location: Albuquerque, Los Alamos

- Sandia Corporation, Albuquerque \$223,000 Sandia Corporation in Albuquerque received \$223,000 to develop solar reactor technologies to produce gas from methane and carbon dioxide waste streams.
- Los Alamos National Security, LLC, Los Alamos \$99,000
 Los Alamos National Security, LLC, in Los Alamos received \$99,000 for risk assessment activities associated with carbon dioxide injection and storage.

Award(s): \$200,000, Geologic Sequestration Site Characterization Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$200,000 to conduct risk assessment studies using the LANL-developed software CO2-PENS with input data provided primarily by other members of the proposal partnership. Los Alamos will focus on developing a simplified computational framework with CO2-PENS that represents key attributes of the storage reservoir properties.

Award(s): \$994,000, Geologic Sequestration Training and Research Grant Program Location: Socorro

New Mexico Institute of Mining and Technology in Socorro received \$994,000 for Geologic Sequestration Training and Research Grant Program. This project is building on current outreach and education programs of the SW Regional Partnership in order to recruit and prepare students for Carbon Sequestration careers.

ENVIRONMENTAL CLEANUP - 10 projects totaling \$398.2 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.

Los Alamos National Laboratory received \$223.6 million for environmental cleanup operations onsite, which include soil and groundwater cleanup and decontaminating and decommissioning excess nuclear facilities.

Award(s): \$64.2 million, LANL Defense D&D Recovery Act Project Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$64.2 million for the Defense D&D Recovery Act Project. This Los Alamos National Laboratory (LANL) project expects to remove five large buildings and ancillary structures comprising the most visible skyline upon entering Los Alamos. In addition, hundreds of feet of process-contaminated waste lines will be deactivated and

demolished (D&D), allowing for the remediation of a consolidated Solid Waste Management Unit associated with the industrial waste lines.

Award(s): \$132.8 million, LANL Defense Soil and Groundwater Recovery Act Project Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$132.8 million for the Defense Soil and Groundwater Recovery Act Project. This Los Alamos National Laboratory (LANL) project is planning to: characterize the types and quantities of waste contained in historical disposal trenches; remove and properly dispose of all waste material buried in disposal trenches; collect and analyze soil and rock for residual contamination along the perimeter, after the contents of the disposal cells have been removed; and meet a consent order milestone with the delivery of the Investigation Completion Report by December 31, 2010.

Award(s): \$14.8 million, LANL Non-Defense Recovery Act Project Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$14.8 million for the LANL Non-Defense Recovery Act Project. Recovery Act funding will be used for deactivation and demolition (D&D) of the main TSTA building, four ancillary structures and underlying concrete slabs in addition to the removal and disposal of several hundred feet of process-contaminated waste lines and any associated soil contamination, sub-grade soil remediation and site restoration. While the goal is to complete structural demolition by 2010, work under this project will continue through FY 2011. These facilities contain hazardous or radiological materials and accelerating the removal and proper disposal reduces risk of release of this material to the environment. The removal of these buildings will also produce a reduction in Surveillance and Maintenance costs of \$125,000 per year. Additionally, completion of this work supports the potential transfer of the associated land for additional use.

Award(s): 2 totaling \$14.1 million, Title X Uranium / Thorium Reimbursement Program Location: Statewide

The goal of these projects is to eliminate the government's liability for environmental cleanup at sites which produced uranium and thorium during the Cold War era for DOE and its predecessors. The funding provided by the Recovery Act enables the licensees of these sites to accelerate cleanup programs and to eliminate environmental risks at the sites.

- Rio Algom Mining LLC, Grants \$9.8 million
- Homestake Mining Company, Grants \$4.2 million

Award(s): 5 totaling \$172.3 million, WIPP Recovery Act Project Location: Carlsbad, Los Alamos, Albuquerque

This Waste Isolation Pilot Project (WIPP) project accelerates the characterization and disposition of already targeted transuranic (TRU) waste and, as a result, cleans up legacy TRU waste from sites more quickly than anticipated. The funds accelerate the cleanup of transuranic waste in New Mexico and across the country.

- Washington Tru Solutions, LLC, Carlsbad \$152.8 million
- Los Alamos National Security, LLC, Los Alamos \$11.9 million
- Visionary Solutions, LLC, Carlsbad \$4.9 million

- Navarro Research And Engineering, Inc., Carlsbad \$2.5 million
- Sandia Corporation, Albuquerque \$200,000

SCIENCE AND INNOVATION – 24 projects totaling \$54.7 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): \$1.4 million, Advanced Materials RD&D in Support of EERE Needs to Advance Clean Energy Technologies and Energy-Intensive Process R&D Location: Albuquerque

Los Alamos National Security, LLC, in Albuquerque received \$1.4 million to develop robust polymer composite membranes for carbon capture and hydrogen purification at elevated temperatures.

Award(s): \$450,000, Advanced Networking Initiative Location: Albuquerque

University of New Mexico in Albuquerque received \$450,000 for the Advanced Networking Initiative. These funds are being used to deploy a demonstration prototype national network as well as conducting research and development on an advanced network test-bed facility which, if successful, will accelerate the commercialization of 100 Gigabit per second networking technologies.

Award(s): \$413,000, Advanced Technology R&D Augmentation Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$450,000 for Advanced Technology R&D Augmentation. This funding allows researchers to focus on three areas of new accelerator and detector tools: high field superconducting magnets made from newly discovered superconductors to raise the magnetic field intensity in accelerators and MRI devices; superconducting RF accelerator cavities which use less electrical power to operate but are able to support high current operation and large area photo-detectors a sensitive area of several square feet.

Award(s): \$684,000, Computational Partnerships (SciDAC-e) Location: Albuquerque

Sandia Corporation in Albuquerque received \$684,000 for Computational Partnerships. This project provides funds for a one-time stimulus of research efforts in applied mathematics and computer science. The goal is to establish the computational foundation and 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): 2 totaling \$17.9 million, Concentrating Solar Power Location: Albuquerque, Los Alamos

• Sandia National Laboratory, Albuquerque - \$17.8 million

The Sandia National Laboratory received \$17.8 million for Concentrating Solar Power. Funds are being used to upgrade and refurbish the National Solar Thermal Test Facility to better support development and testing of CSP technologies.

Los Alamos National Laboratory, Los Alamos - \$50,000

Los Alamos National Laboratory in Los Alamos received \$50,000 for Concentrating Solar Power. The goal of this project is to provide Heat Transfer Fluid that has latent heat, at high temperatures, increasing CSP applications' overall efficiency with lower capital costs.

Award(s): \$75,000, DIII-D Facility Upgrades Location: Albuquerque

Sandia Corporation in Albuquerque received \$75,000 for DIII-D Facility Upgrades. This project is providing a one-time infrastructure upgrade and modernization program for the DIII-D National Fusion Facility, located at General Atomics (GA) in San Diego, CA. 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 accelerate the advancement of understanding in plasma science, fusion science and fusion technology, which is the knowledge base needed for an economically and environmentally attractive fusion energy source.

Award(s): 2 totaling \$3.4 million, Energy Frontier Research Centers Location: Los Alamos, Albuquerque

Sandia Corporation, Albuquerque - \$2.8 million

Sandia Corporation in Albuquerque received \$2.8 million for research at the Sandia National Laboratories to study energy conversion in tailored nanostructures as a basis for dramatically improved solid state lighting.

• Los Alamos National Security, LLC, Los Alamos - \$600,000

Los Alamos National Security, LLC, received \$600,000 for research at the Los Alamos National Laboratory to capitalize on recent advances in the science of how nanoparticles interact with light to design materials that have vastly greater efficiencies for the conversion of sunlight into electricity.

Award(s): \$12.5 million, Energy Sciences Fellowships and Early Career Awards Location: Los Alamos

Los Alamos National Laboratory in Los Alamos received \$12.5 million to create graduate, post-doctoral and early career fellowship awards to stimulate research careers in energy, environmental and climate change sciences.

Award(s): \$500,000, Enhance and Accelerate FEMP Service Functions to the Federal Government Location: Albuquerque

Sandia Corporation in Albuquerque received \$500,000 for Enhance and Accelerate FEMP Service Functions to the Federal Government. This funding is for capital equipment for system integration in the distributed energy technology lab refurbishment which will create additional space to conduct internal and industry-partnered research and development efforts.

Award(s): 4 totaling \$2.7 million, Enhanced Geothermal Systems (EGS) Technology R&D Location: Los Alamos, Albuquerque

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 encourages the private sector to exploit EGS technology for commercial-scale deployment.

• Sandia National Laboratory, Albuquerque - \$1.5 million

Sandia National Laboratory in Albuquerque received two awards totaling \$1.5 million to: 1) design, develop and field test highly integrated, high temperature data loggers using silicon insulator and silicon carbide technologies, 2) develop a drilling system based upon pneumatic down-the-hole hammer bits and polycrystalline diamond compact bits, and 3) test supercritical fluids in a pilot-scale Brayton Cycle and evaluate the performance of the working fluids.

• Los Alamos National Laboratory, Los Alamos - \$894,000

Los Alamos National Laboratory received \$300,000 to develop a multipurpose acoustic sensor for downhole fluid monitoring in EGS reservoirs over typical ranges of pressures and temperatures and then demonstrate the capabilities and performance of this sensor for conditions in different EGS systems.

Los Alamos National Laboratory, Los Alamos - \$300,000

Los Alamos National Laboratory received \$300,000 to improve image resolution for fracture detection in enhanced geothermal reservoirs, image the flow in the fractures with superresolution imaging, and quantify fluid flow and temperature changes during and after stimulation.

Award(s): \$430,000, Infrastructure Improvements for Innovative Confinement Concepts (ICC) Experiments

Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$430,000 to build a state-of-the-art digital framing camera on an existing project that will significantly improve their near-term chances of finding better ways to confine plasmas and to understand their properties.

Award(s): \$4.2 million, Lab Call for Facilities and Equipment Location: Albuquerque

Sandia Corporation in Albuquerque received \$4.2 million for Lab Call for Facilities and Equipment. This project supports a new Battery Abuse Testing Laboratory.

Award(s): \$3.3 million, Nanoscale Science Research Centers Location: Albuquerque

Sandia Corporation in Albuquerque received \$3.3 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): \$3.1 million, Nuclear Science Workforce Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$3.1 million for Nuclear Science Workforce. This Recovery Act project supports initiatives in Applications of Nuclear Science and Technology designed for researching and developing activities in nuclear science relevant to applications important to the Nation.

Award(s): \$57,000, OSTI Technology Infrastructure

Location: Statewide

Wildflower International, Ltd., received \$57,000 for National Laboratory bandwidth management.

Award(s): \$1 million, PHENIX Forward Vertex Detector Location: Los Alamos

Los Alamos National Security, LLC, in Los Alamos received \$1 million for the PHENIX Forward Vertex Detector. The PHENIX Silicon Vertex Tracker (VTX) MIE is a joint project with the Japanese at the Relativistic Heavy Ion Collider (RHIC). The PHENIX VTX is a barrel of silicon pixel and strip detectors that will provide precision measurement of heavy quark production to study the thermalization process in heavy ion collisions. Recovery Act funds are being spent on equipment purchases for the PHENIX VTX project, including data acquisition crates for front-end modules for strip detectors, data collection modules for data acquisition systems and installation fixtures and external cooling system to remove heat from electronics.

Award(s): \$625,000, Plasma Science Centers

Location: Albuquerque

Sandia Corporation in Albuquerque received \$625,000 to fund research cooperative agreements for Plasma Science Centers and accelerate the advancement of understanding in plasma science.

Award(s): 2 totaling \$3.3 million, Solid State Lighting Location: Albuquerque

Sandia Corporation in Albuquerque received two awards totaling \$3.3 million for Solid State Lighting. The objective of these projects is to investigate the effect of GaN orientation on the IQE and EQE of green LEDs and to develop high-volume epitaxial growth systems.

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/NewMexico

Hobbs

New Mexico brightens lights to save money

By summer, all traffic, warning and pedestrian signals in New Mexico will be replaced with LED lamps, which use significantly less electricity than incandescent lamps.

The project is funded by \$5 million in Recovery Act money allocated to the State Energy Program, and about 75 percent of the changeovers are already complete. In Hobbs, the savings on the city's electric bill could add up to about \$40,000 in one year thanks to the retrofitting of 42 intersections.

While the intersections throughout the state are operated and maintained by the Department of Transportation, the resulting electric utility bills are paid by local governments. But with the 80-percent savings from the changes in lighting equipment, those communities will see an immediate reduction in electric costs.

"There are the energy and cost savings, as well as labor and safety savings because our traffic department doesn't have to put people out in the middle of intersections changing an incandescent bulb somewhere every morning," Todd Randall, city engineer, says.

Even the governor, like Hobbs' residents, is happy to see the

"It's exciting to implement an energy-saving project that will touch communities across the entire state," Gov. Bill Richardson said in a news release.

Not only will the LED bulbs save money, but they are also brighter and provide improved safety for vehicles, bicyclists and pedestrians. As a direct result of this Recovery Act project, 10 million pounds of carbon dioxide emissions will be avoided. That's good news for not only New Mexico but for all Americans.

Los Lunas

High school students plan solar energy projet

Engineering students at Los Lunas High School in New Mexico put their knowledge to work by scoping out the optimal site for a new solar energy system that's expected to save the school district more than \$20,000 a year.

In September 2009, the school district learned of a grant opportunity through the State Energy Program with funds from the American Recovery and Reinvestment Act to install a photovoltaic system. By October, students, who completed a lesson about solar site development, determined the best place to put it: the school's parking

Find out the solar potential for your state

"When we heard about the grant, we all got real excited, and we all said, 'Let's go for it'," says John Gabaldon, who teaches math and engineering classes at the high school. "Real-world application is what we are aiming for, and this was a perfect opportunity."

The students' planning, surveying and calculations for a 50

kilowatt system became a key part of the final grant application submitted in November.

Seven months later, the high school got the good news, along with 14 other school districts in New Mexico: Los Lunas school district received part of New Mexico's \$4.5 million Recovery Act grant and could install a solar energy system. The clean renewable energy systems will be constructed and activated as early as October.

Significant savings

The \$300,000 solar energy system will help reduce the high school's energy costs by up to \$1,700 a month, according to school officials. The system is projected to generate approximately 94,000 kWh per year of clean renewable energy.

The local utility company, Public Service Company of New Mexico, will provide renewable energy credits that will generate a combined cost savings of \$20,582 per year based on current energy prices, Othick says.

"New Mexico is getting nailed by budget reductions," says Terry Othick, the chief operations officer heading the project for the Los Lunas school district. "And therefore any opportunity to use PV solar to reduce our energy bills is going to be greatly welcomed."

The solar panels, which will be equipped with interactive, real-time software, will be integrated into the school's calculus, engineering, physics and astronomy classes.

Consolidated Solar Technologies, an Albuquerque-based solar firm, will install the system, which will have seven to nine, ground mounted panels that take up about 120 square feet. The firm will also provide the district with a mobile solar demonstration unit that can be moved throughout the district for educational purposes concerning renewable energy.

Three of Gabaldon's engineering students, who have since graduated, decided on a parking lot on the southwest corner of the school as the site for the installation.

A hot bed

Los Lunas, a village of 10,000 people about 25 miles south of Albuquerque, sits in an area that has some of the best solar resources in the country.

According to the National Renewable Energy Laboratory, it has the solar potential for about 6.5 kWh per square meter per day, the amount of solar radiation that falls on an array on average, during each day of any month of the year. The highest amount is 6.8.

"The one thing we have in New Mexico is sunshine," says Terry Othick, chief operations officer for Los Lunas school district. "There are only very few cloudy days, so solar is a great opportunity for this geographic area. And it's free."

There are no obstructions; the slope is just right; it is close enough to the school's power grid; and it was the least expensive place to install them.

"They wanted it visible," Othick says. "It will sit on one side, off State Highway 25. Everyone is going to see it."

Creating jobs

The 15 school districts in New Mexico were selected through a competitive application process. Ryan Helton, solar energy program manager at the New Mexico Energy, Minerals and Natural Resources Department, says they received about 35 applications from school districts across the state.

The grants came a few months after Governor Bill Richardson announced his Green Jobs Executive Order to develop and capitalize on renewable resources in the state. One of the goals of the order is

to train and build a green workforce.

During the announcement of the awards, Gov. Richardson stated that the solar panels for schools project will inspire students to pursue education and jobs in New Mexico's emerging green economy.

"From the very beginning our focus was on job creation and renewable energy," says Helton, "but we're also very interested in having the schools develop programs and to get their students involved in renewable energy development and the technology behind it."