Department of Energy

Recovery Act State Memos

Texas

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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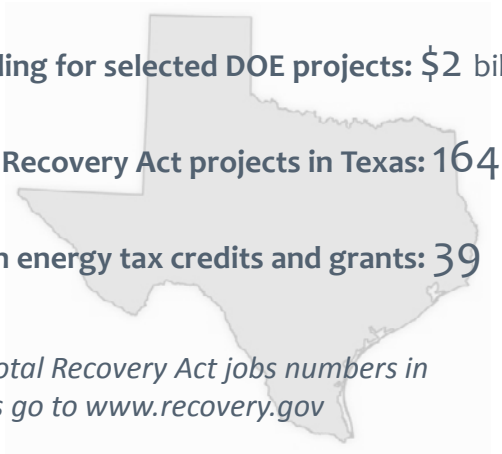
American Recovery and Reinvestment Act

U.S. DEPARTMENT OF ENERGY • TEXAS RECOVERY ACT SNAPSHOT



Funding for selected DOE projects: $2 billion

DOE Recovery Act projects in Texas: 164

Clean energy tax credits and grants: 39

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

Texas has substantial natural resources, including oil, gas, solar, biomass, and wind 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 Texas are supporting a broad range of clean energy projects, from carbon capture and storage to energy efficiency, the smart grid, solar, geothermal, and biomass projects. Through these investments, Texas's businesses, universities, non-profits, and local governments are creating quality jobs today and positioning Texas to play an important role in the new energy economy of the future.

EXAMPLES OF TEXAS FORMULA GRANTS

Program	State Energy Program	Weatherization Assistance Program	Energy Efficiency Conservation Block Grants	Energy Efficiency Appliance Rebate Program
Award (in millions)	$218.8	$327	$208.9	$23.3
	The Texas Comptroller has received $218.8 million to invest in state-level energy efficiency and renewable energy priorities.	The State of Texas has received $327 million to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions and saving money for Texas's low-income families. Over the course of the Recovery Act, Texas expects to weatherize nearly 34,000 homes.	Ninety-two communities in Texas received a total of $208.9 million to develop, promote, implement, and manage local energy efficiency programs.	Texas has received $23.3 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 TEXAS COMPETITIVE GRANTS AND TAX CREDITS

Award	$914.9 million	$253 million	$350 million	$200 million
	Texas received **thirty 1603 payments for renewable energy generation** totaling **$914.9 million**, which include biomass, solar and wind facility projects. For example Texas Gulf Wind LLC received $178.0 million for a wind project.	**Air Products & Chemicals Inc.** has received **$253 million** to capture and sequester one million tons of carbon dioxide per year from existing steam-methane reformers in Port Arthur. The project team includes **Air Products & Chemicals, Denbury Onshore LLC, the University of Texas Bureau of Economic Geology,** and **Valero Energy Corporation**.	**Summit Texas Clean Energy** was awarded **$350 million** to accelerate the development of advanced coal technologies for commercial-scale carbon capture and storage.	**Center Point Energy** in Houston was awarded **$200 million** through the **Smart Grid Investment Grant Program** to complete their current smart meter project and expand the city's smart grid. The project will include the installation of 2.2 million smart meters and 550 sensors and automated grid switches.

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	$327.0
	State Energy Program (F)	1	$218.8
	Energy Efficiency and Conservation Block Grant (F)	92	$208.9
	BetterBuildings (CM)	1	$10.0
	Energy Efficient Appliance Rebate (F)	1	$23.3
	Building Energy Efficiency (CM)	3	$0.008
	Industrial Energy Efficiency (CM)	4	$20.0
	Additional Programs (CM & C)	1	$0.3
	TOTAL Energy Efficiency	104	$808.3
Renewable Energy	*Solar (CM)*	5	$1.8
	Geothermal (CM)	9	$26.0
	TOTAL Renewable Energy	14	$27.8
Electric Grid	*Smart Grid Investment and Demonstrations Project (CM)[3]*	8	$282.7
	State and Local Energy Assurance and Regulatory Assistance (F)	2	$3.8
	Smart Grid Workforce Training (CM)[3]	3	$2.8
	Interconnection Transmission Planning and Analysis (F & CM)	2	$3.5
	TOTAL Electric Grid	15	$292.8
Transportation	*Clean Cities Alternative Fuel and Vehicles Program (CM)*	3	$38.1
	Additional Programs (CM)	2	$2.3
	TOTAL Transportation	5	$40.4
Carbon Capture and Storage	*CCS Projects (CM)*	8	$766.5
	Geologic Characterization Projects (CM)	1	$4.6
	Research and Training (CM)	5	$2.1
	TOTAL Carbon Capture and Storage	14	$773.2
Environmental Cleanup	*Environmental Management Contracts (C)*	1	$0.01
	TOTAL Environmental Cleanup	1	$0.01
Science and Innovation	*Energy Frontier Research Centers (CM)*	1	$13.1
	Small Business Research (SBIR/STTR) (CM)	5	$0.7
	National Laboratory Facilities (C)	1	$0.04
	Additional Programs	4	$3.2
	TOTAL Science and Innovation	11	$17.0
TOTAL - DOE Programs[4]		**164**	**$1,959.6**
Tax Credits/ Payments[5]	*Payments for Renewable Energy Generation in Lieu of Tax Credits (1603)*	30	$914.9
	Clean Energy Manufacturing Tax Credits (48C)	9	$68.6
	TOTAL Tax Incentives	39	$983.5
TOTAL - DOE/Treasury + DOE		**203**	**$2,943.1**

[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 – 104 projects totaling $808.3 million

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

Award(s): $327 million, Weatherization Assistance Program (WAP)
Location: Statewide
Texas received $327 million to scale-up existing weatherization efforts in the state, creating jobs, reducing carbon emissions and saving money for Texas's low-income families. Over the course of the Recovery Act, Texas expects to weatherize nearly 34,000 homes. The funds will be awarded to agencies and contractors to perform home retrofits. To qualify, households must be at or below 125 percent of federal poverty guidelines and in need of weatherization procedures. Priority is given to households with very low income, small children, elderly residents, or a disabled resident.

Award(s): $218.8 million, State Energy Program (SEP)
Location: Statewide
The Texas Comptroller received $218.8 million to invest in state-level energy efficiency and renewable energy priorities. Texas is using Recovery Act SEP funding to increase energy efficiency and expand the use of renewable energy in the public sector. In addition, this funding is providing information resources that will empower Texans from across the state to achieve energy, emissions and cost savings for years to come. Texas is introducing a revolving loan program that will enable public facilities to implement building efficiency measures. Funds are also being used for competitive grants to state agencies, communities, schools and hospitals to install and demonstrate solar, wind, biomass and geothermal energy technologies. Recovery Act SEP funding supports a program focused on transportation improvements that will allow schools, hospitals and other public entities to modernize traffic signaling equipment and facilitate the wider deployment of alternative fuels.

Award(s): 92 totaling $208.9 million, Energy Efficiency and Conservation Block Grant Program (EECBG)
Location: Statewide
Recipients: Abilene, Alabama-Coushatta Tribes of Texas, Allen, Amarillo, Arlington, Austin, Baytown, Beaumont, Bedford, Bexar County, Brazoria County, Brownsville, Bryan, Carrollton, Cedar Hill, Cedar Park, College Station, Conroe, Coppell, Corpus Christi, Dallas, Del Rio, Denton, DeSoto, Duncanville, Edinburg, El Paso, Euless, Town of Flower Mound, Fort Bend County, Fort Worth, Frisco, Galveston, Garland, Georgetown, Grand Prairie, Grapevine, Haltom City, Harlingen, Harris County, Hidalgo County, Houston, Huntsville, Hurst, Irving, Keller, Kickapoo Traditional Tribe of Texas, Killeen, Lancaster, Laredo, League City, Lewisville, Longview, Lubbock, Mansfield, McAllen, McKinney, Mesquite, Midland, Mission, Missouri City, Montgomery County, New Braunfels, North Richland Hills, Odessa, Pasadena, Pearland, Pharr, Plano, Port Arthur, Richardson, Round Rock, Rowlett, San Angelo, San Antonio, San Marcos, Sherman, Sugar Land, Tarrant County, Temple, Texarkana, Texas City, Texas State Energy Office, The Colony, Travis County, Tyler, Victoria, Waco, Wichita Falls, Williamson County, Ysleta Del Sur Pueblo of Texas - Tribe

Ninety-two communities in Texas received a total of $208.9 million to develop, promote, implement and manage local energy efficiency programs.

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

- **Texas State Energy Office - $45.6 million**
  These funds are being administered by the Texas State Energy Commission Office (SECO), which is redistributing funds by population-based formula grants to the approximately 1,130 cities and 244 counties in Texas that did not initially receive direct EECBG funds from DOE. SECO is encouraging localities applying for funds to utilize proven energy conservation measures that have a favorable return on investment. SECO is working with private entities and investors to identify financial incentives that cities and counties can use to match money from the EECBG program. SECO, in partnership with the Texas Historical Commission, is also using EECBG funds to retrofit county courthouses and other buildings with energy efficiency and conservation measures. Projects undertaken with Recovery Act dollars are expected to reduce greenhouse gas emissions equivalent to 2,850,998 tons of carbon dioxide annually, while creating hundreds of new green jobs within the state.

- **City of Houston - $22.8 million**
  These funds are being used to enhance the City of Houston's building retrofit program, achieve super energy efficient homes for low income buyers and expand the curbside recycling program.

- **City of San Antonio - $12.9 million**
  Funds supplement existing programs to provide energy efficiency and weatherization services for low-income households. The city is also planting trees in neighborhoods to create additional shade to reduce the need for cooling. Another project undertaken with this funding will enhance the energy efficiency of city-owned facilities and add photovoltaic power generation at both the Henry B. Gonzales Convention Center and at the San Antonio International Airport. These projects will promote green tourism, and the city expects these activities will create or retain 113 jobs.

- **City of Dallas - $12.8 million**
  The Dallas Sustainable Communities Initiative - Residential Energy Efficiency Retrofits will reduce energy consumption by at least 15 percent in approximately 480 homes, through weatherization / minor repair projects in designated NIP areas along with ENERGY STAR® appliances, energy audits and ENERGY STAR inspections. The Green Building Office in Building Inspection supports greater energy efficiency and conservation through implementation of the city's green building ordinance, which requires construction projects to meet green building requirements.

- **City of Fort Worth - $6.7 million**
  The City of Fort Worth is creating a revolving loan fund to provide incentives for implementing energy efficiency upgrades and programs throughout the community. The fund provides low- or no-interest loans to qualifying projects. In another project, the city is encouraging the use of bicycling by installing shelters, bike racks and pathways. The city expects these tasks will create or retain 75 jobs.

- **City of El Paso - $5.8 million**
  The City of El Paso is incorporating a renewable energy demonstration project into public art for Cleveland Square Park. EECBG is funding the renewable energy to power the project and add a renewable energy outreach component. The city is establishing its own "cash for clunkers" program in which residents exchange vehicles manufactured before 1981, or newer vehicles that have failed an emissions test, for $200 and a Sun Metro bus pass. The city scraps vehicles collected through the program. The city expects these activities will create or retain more than 180 jobs.

- **City of Arlington - $3.4 million**
  The City of Arlington is funding nine projects with EECBG funding including energy efficiency retrofits of the city hall and seven other city buildings, LED lighting upgrades at the convention center to replace lighting in twelve meeting rooms and the 30,000 square foot ballroom and an anti-vehicle idling initiative. Through the implementation of the nine individual projects, the city anticipates saving over 41.3 million kWh of energy and reducing greenhouse gas emissions by 21,392 tons of carbon (CO2e) equivalents.

- **City of Plano - $2.5 million**
  The City of Plano is establishing a financial incentive program to encourage installation of residential energy efficiency upgrades throughout Plano. The rebates cover 15 percent of the cost of certain improvements -- up to a maximum rebate of $1,575 per household. The city is partnering with designated companies to offer free home energy audits.

- **City of Laredo - $2.1 million**
  The City of Laredo is using EECBG funds for planning and administration, retrofit and rehab, energy efficiency, alternative energy and revolving loan fund (RFL) projects to provide loans to residents for home energy improvements. The city anticipates this funding will help create or retain a minimum of 73 jobs and expects that the RLF will further add to local job creation.

Award(s): $23.3 million, Energy Efficient Appliance Rebate Programs
Location: Statewide
Texas received $23.3 million for the Energy Efficient Appliance Rebate Program, which offers consumer rebates for purchasing certain ENERGY STAR appliances. These energy efficient appliances reduce energy use and save money for families while supporting the local economy. 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.

Award(s): $10 million, BetterBuildings
Location: Austin
The City of Austin received $10 million for the BetterBuildings program. This project is accelerating energy and water efficiency, and integrated renewable energy improvements in private and commercial properties in the City of Austin's energy service territory. The project focuses on alternative financing options for property owners, including new financing mechanisms, interest rate buy downs and on-bill repayment.

Award(s): 3 totaling $8,000, Buildings and Appliance Market Transformation
Location: Statewide
The Buildings and Appliance Market Transformation project expands building codes, accelerates the pace of Appliance Standard test procedure development and improves the efficiency of commercial buildings' operations by training building operators and commissioning agents.

Award(s): $10 million, Combined Heat and Power, District Energy Systems, Waste Energy Recovery Systems and Efficient Industrial Equipment
Location: Houston
The Texas Medical Center Central Heating and Cooling Company in Houston received $10 million to build a Combined Heat and Power (CHP) facility at its existing district heating plant, serving the largest medical center in the world. The CHP system increases electric and thermal efficiency, provides steam to the campus and improves the overall reliability of the existing plant, enabling continued operations even in the event of a grid outage. The new CHP plant will generate 45 MW of power and provide steam to the district heating plant. The project will save an estimated 0.75 trillion Btu annually over separate electrical and steam generation.

Award(s): $250,000, Ground Source Heat Pumps
Location: Austin
The University of Texas in Austin received $250,000 to design supplementary heat rejection systems that will enable Ground Source Heat Pumps to work more effectively in hot, arid climates.

Award(s): 2 totaling $9.8 million, Improved Energy Efficiency for Information and Communication Technology (ICT)
Location: Houston, Plano
This project will conduct research, development and demonstration projects to promote new technologies that improve energy efficiency in the ICT sector. As ICT services continue to converge, these industries face increasingly similar challenges to control the power usage of their microprocessors or servers and supporting power and cooling systems.

- **The Hewlett-Packard Company, Houston - $7.4 million**
  The Hewlett-Packard Company in Houston received $7.4 million to test an integrated system of high voltage AC electrical supply, chilled water cooling components and a distributed Direct Current (DC) electrical system which can interface with renewable energy sources. Geared towards the largest segment of the Data Center market, small-to-medium businesses, this technology provides managed and improved efficiencies in cooling, and reduces energy losses and heat generation from conversion of electrical supplies. In addition, the ability to connect intermittent renewable energy sources to the data center allows for a smoother transition to or supplement of solar, wind or other sources of energy. If commercialized, this solution is estimated to employ over 60 people and reduce 30 trillion BTUs ,the equivalent of yearly carbon dioxide emissions from 75 million propane cylinders used for home barbeques.

- **Lineage Power Corporation, Plano - $2.4 million**
  Lineage Power Corporation in Plano received $2.4 million to develop and test a power rectifier which efficiently converts Alternating Current supplied by electricity utilities to Direct Current, which is required by most data and telecommunication center equipment. This rectifier has high efficiency over the entire use range. Software is also being utilized to keep conventional, existing rectifiers operating only during their highest efficiency intervals. Rectifiers are part of the "Power

Supply Chain" and typically lose significant energy to heat loss. Lost energy in heat loss comprises 25 percent of energy consumed in a data center. With an energy savings estimate of 4 trillion BTUs per year and carbon dioxide emissions reductions equivalent to the burning of over 1,000 railcars of coal, the initial development of this technology will create over twenty jobs.

Award(s): $132,000, Industrial Assessment Centers and Plant Best Practices
Location: College Station
Texas A&M University in College Station received $132,000 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 – 53 projects totaling $1.0 billion

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): 30 payments totaling $914.9 million from DOE / Treasury, 1603 Payments for Renewable Energy Generation
Location: Statewide
*For current number of 1603 awards, see the weekly update at http://www.treas.gov/recovery/1603.shtml

- **Texas Gulf Wind, LLC, Armstrong - $178 million**
  Texas Gulf Wind, LLC, in Armstrong received $178 million for a wind project.

- **E.ON Climate & Renewables North America, Inc., Roscoe - $121.9 million**
  E.ON Climate & Renewables North America, Inc., in Roscoe received $121.9 million for a wind project.

- **Penascal Wind Power, LLC, Sarita - $114.1 million**
  Penascal Wind Power, LLC, in Sarita received $114.1 million for a wind project.

- **Panther Creek Wind Farm, LLC, Big Spring - $107.6 million**
  Panther Creek Wind Farm, LLC, in Big Spring received $107.6 million for a wind project.

- **Inadale Wind Farm, LLC, Roscoe - $94.2 million**
  Inadale Wind Farm, LLC, in Roscoe received $94.2 million for a wind project.

- **Bull Creek Wind, LLC, O'Donnell - $91.4 million**
  Bull Creek Wind, LLC, in O'Donnell received $91.4 million for a wind project.

- **Barton Chapel Wind, LLC, Jacksboro - $72.6 million**
  Barton Chapel Wind, LLC, in Jacksboro received $72.6 million for a wind project.

- **South Trent Wind, LLC, Sweetwater - $59.5 million**
  South Trent Wind, LLC, in Sweetwater received $59.5 million for a wind project.

- **Goat Wind, LP, Sterling City - $38.5 million**

Goat Wind, LP, in Sterling City received $38.5 million for a wind project.

- **Sunray Wind, LLC, Sunray - $26.2 million**
  Sunray Wind, LLC, in Sunray received $26.2 million for a wind project.

- **Rio Grande Valley Sugar Growers, Inc., Santa Rosa - $10.2 million**
  Rio Grande Valley Sugar Growers, Inc., in Santa Rosa received $10.2 million for a biomass project.

- **DDC RRTC, Ltd., Round Rock - $181,000**
  DDC RRTC, Ltd., in Round Rock received $181,000 for a solar electricity project.

- **AEG Power Solutions USA, Inc., Plano - $83,000**
  AEG Power Solutions USA, Inc., in Plano received $83,000 for a solar electricity project.

- **Eighth Street Animal Hospital, Odessa - $62,000**
  Eighth Street Animal Hospital in Odessa received $62,000 for a solar electricity project.

- **Bull Creek Partners, LP, Austin - $45,000**
  Bull Creek Partners, LP, in Austin received $45,000 for a solar electricity project.

- **Willowwood Apartments, Ltd, Austin - $39,000**
  Willowwood Apartments, Ltd, in Austin received $39,000 for a solar electricity project.

- **Barton Cove II Apartments, LLC, Austin - $30,000**
  Barton Cove II Apartments, LLC, in Austin received $30,000 for a solar electricity project.

- **New World Renewable Energy Leasing, Inc., Midland and Commerce (4) - $120,000**
  New World Renewable Energy Leasing, Inc., in Midland and Commerce received four payments totaling $120,000 for solar electricity projects.

- **Anton G. Bell, Flint - $25,000**
  Anton G. Bell in Flint received $25,000 for a solar electricity project.

- **DogBoy Dog Ranch, Pflugerville - $24,000**
  DogBoy Dog Ranch in Pflugerville received $24,000 for a solar electricity project.

- **Rappaport's Piano Workshop, Round Rock - $16,000**
  Rappaport's Piano Workshop in Round Rock received $16,000 for a solar electricity project.

- **Valley Boring Service, Ltd., Edinburg - $16,000**
  Valley Boring Service, Ltd., in Edinburg received $16,000 for a solar electricity project.

- **Harvest Moon Development Company, Houston - $10,000**
  Harvest Moon Development Company in Houston received $10,000 for a solar electricity project.

- **Star Smith, Nixon - $10,000**
  Star Smith in Nixon received $10,000 for a small wind project.

- **Denton Electric, Inc., Denton - $8,000**
  Denton Electric,Inc., in Denton received $8,000 for a solar electricity project.

- **Surya Energy Solutions, LLC, Austin (2) - $6,000**
  Surya Energy Solutions, LLC, in Austin received two awards for $6,000 each for solar electricity projects.

Award(s): 9 totaling $68.6 million from DOE / Treasury, Clean Energy Manufacturing Tax Credit (48C)
Location: Statewide

- **Texas Instruments, Inc., Richardson - $51.5 million**
  Texas Instruments, Inc., in Richardson received $51.5 million to re-equip a facility and purchase equipment to produce 300mm wafers for advanced power management semiconductors.

- **Siemens Energy, Inc., Hutchinson - $4.3 million**
  Siemens Energy, Inc., in Hutchinson received $4.3 million to expand a wind turbine blade manufacturing facility. The expanded facility will be capable of producing both 45 meter and 49 meter blades for the Siemens SWT-2.3 MW wind turbine. The resulting product will aid the domestic wind power industry.

- **Roller Bearing Co. of America, Inc., Houston - $4.2 million**
  Roller Bearing Company of America, Inc., in Houston received $4.2 million to produce turbine blade and yaw bearings. The resulting parts aid domestic production of wind turbines and renewable wind energy.

- **Martifer-Hirschfeld Energy Systems, LLC, San Angelo - $3.5 million**
  Martifer-Hirschfeld Energy Systems, LLC, in San Angelo received $3.5 million to develop a factory for the production of steel towers for wind turbine generators. This evolution will allow the wind tower plant to achieve considerable gains in terms of efficiency and in production times.

- **Alstom, Inc., Amarillo - $2.7 million**
  Alstom, Inc., in Amarillo received $2.7 million to produce and assemble the complete nacelle for wind turbines (hub, gearbox, frames, generator, electrical convertor, etc.) for its 60 Hz North American product line. This product line is comprised of two wind turbine platforms, the ECO80 (1.67 MW) and the larger ECO 100 (3.0 MW).

- **Johnson Plate & Tower Fabrication, Inc., Canutillo - $1.4 million**
  Johnson Plate & Tower Fabrication, Inc., in Canutillo received $1.4 million to re-equip a facility to manufacture commercial wind towers.

- **Cooper Power Systems, LLC, Nacogdoches - $496,000**
  Cooper Power Systems, LLC, in Nacogdoches received $496,000 to produce electrical transformers with amorphous steel cores. Amorphous steel core transformers provide 70 percent lower no-load losses than normal steel transformers.

- **Ringdale, Inc., Georgetown - $450,000**
  Ringdale, Inc., in Georgetown received $450,000 to purchase equipment to expand production capacity of commercial LED lighting and advanced lighting controls technology. The results will address outdoor, street, area lights and indoor recessed down-lights and will promote greater energy efficiency.

- **LoneStar, Houston - $113,000**
  LoneStar in Houston received $113,000 to purchase and install specialized manufacturing equipment (5-Axis CNC Machine) in order to produce a specialized Polycrystalline Diamond rock drilling tool for enhanced geothermal systems. This specialized drill bit cannot be produced without a 5-Axis CNC Machine. This drill bit will provide a lower cost method for drilling the wells, and production will enhance the commercial success of geothermal projects in this country.

Award(s): 6 totaling $14.3 million, Enhanced Geothermal Systems (EGS) Technology R&D
Location: Statewide

- **Baker Hughes Oilfield Operations, Inc., Houston - $5 million**
  Baker Hughes Oilfield Operations, Inc., in Houston received $5 million to develop a directional drilling system that can withstand temperatures up to 300 degrees C including the drill bit, downhole motor with directional control capabilities and a designed-for-purpose drilling fluid.

- **Schlumberger Technology Corp., Rosharon - $4.7 million**
  Schlumberger Technology Corp. in Rosharon received $4.7 million to develop drilling tools that can perform at temperatures up to 300 degrees C.

- **The University of Texas at Austin - $1.4 million**
  The University of Texas at Austin received $1.4 million for a project involving the combination of multi-component seismic technology with rock physics modeling that will be used to image and analyze geothermal systems.

- **ADI Analytics, LLC, Houston - $1.3 million**
  ADI Analytics, LLC, in Houston received $1.3 million to perform thorough research and analysis of the financial environment affecting EGS development.

- **Texas Engineering Experiment Station, College Station - $1.1 million**
  The Texas Engineering Experiment Station in College Station received $1.1 million for a project involving the development of a geological and geomechanical framework for the analysis of microseismic activity in EGS field demonstrations.

- **CSI Technologies, LLC, Houston - $767,000**
  CSI Technologies, LLC, in Houston received $767,000 to develop materials that can temporarily seal targeted fracture areas of an EGS system and then decompose to reopen the area to assist in reservoir design and development.

Award(s): $1.5 million, Geothermal Demonstrations
Location: Houston
Universal GeoPower, LLC, received $1.5 million to utilize a modular low temperature binary unit to produce power from oil and gas wells in Liberty County, Texas.

Award(s): 2 totaling $1.4 million, High-Penetration Solar Deployment
Location: Houston, Austin

- **Houston Community College, Houston - $940,000**
  Houston Community College received $940,000 to establish a network of educational, industry and state partners to ensure the availability and effectiveness of solar installation training throughout the South-Central region. The project provides professional development opportunities for educators at institutions that wish to start or improve training and education programs. In addition, existing solar training programs are being upgraded and additional instructors are being trained. These newly trained instructors will teach students the SPV and SHC curricula at their home institutions. A model curriculum will be provided for implementation at new partners schools.

- **City of Austin - $450,000**
  The City of Austin received $450,000 for High Penetration Solar Deployment. Austin Energy is collaborating with the Austin Independent School District, the University of Texas and Austin Community College to improve K-12 solar curriculum, install PV demonstration projects with educational components at area schools and develop career pathways for Solar Engineers and Solar Technician certifications**.**

Award(s): $5.3 million, National Geothermal Database, Resource Assessment and Classification System
Location: Dallas
Southern Methodist University received $5.3 million to help populate the National Geothermal Database with geothermal related data from various sources.

Award(s): 3 totaling $416,000, Photovoltaic (PV) Systems Development
Location: Houston, College Station, Arlington

- **University of Houston, Houston - $150,000**
  The University of Houston received $150,000 to evaluate an ion beam-assisted deposition process to double the efficiency of thin film PV. The deposition process is also benefiting the advantage of thin film manufacturing by the use of less material and roll-to-roll continuous processing**.**

- **Texas Engineering Experiment Station, College Station - $147,000**
  The Texas Engineering Experiment Station in College Station received $147,000 to develop a new method for thin film poly-Si cell fabrication that has a low thermal budget and is applicable to large area, low cost substrates for mass production. Texas Engineering is using a pulsed rapid thermal annealing process to convert a-Si to poly-Si via a vertical crystallization mechanism.

- **The University of Texas at Arlington - $120,000**

The University of Texas at Arlington received $120,000 to demonstrate the feasibility of electrodeposited and solution-doped transparent conducting oxides (TCOs) such as zinc oxide. Zinc oxide is an "on-top" TCO that can be deposited on semiconductors in thin-film and future solar cells including amorphous silicon, copper indium gallium selenide and emerging solar cells.

Award(s): $5 million, Validation of Innovative Exploration Technologies
Location: El Paso
El Paso County received $5 million to utilize new portable drilling technology and geological analysis techniques in Ft. Bliss.

MODERNIZING THE ELECTRIC GRID – 15 projects totaling $292.8 million

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

Award(s): $2.4 million, Enhancing State and Local Governments' Energy Assurance
Location: Statewide
The Texas Comptroller received $2.4 million for Enhancing State and Local Governments' Energy assurance capabilities by enhancing inter- and intra-state coordination and cooperation during energy emergencies. This project funds states to update and develop State Energy Assurance Plans that incorporate new energy portfolios such as wind, renewables, biofuels, etc. This program also funds cities updating and developing Energy Assurance Plans within local areas. The two sets of funding are being used to hire or retrain staff, building in-house expertise in the areas of Smart Grids, critical energy infrastructure interdependencies and cyber-security.

Award(s): 2 totaling $3.5 million, Interconnection Transmission Planning and Analysis
Location: Austin

- **Electric Reliability Council of Texas (ERCOT), Austin - $2.5 million**
  The Electric Reliability Council of Texas in Austin received $2.5 million for Interconnection Transmission Planning and Analysis. Through a detailed analysis of the numerous independent factors affecting resource development in the deregulated ERCOT market, ERCOT will increase the impact of the existing ERCOT long-range planning process on the continued development of a cost-effective, reliable, power-delivery system that allows the efficient development of low-cost, environmentally friendly generation.

- **Electric Reliability Council of Texas (ERCOT), Austin - $1 million**
  The Electric Reliability Council of Texas in Austin received $1 million for Interconnection Transmission Planning and Analysis. By facilitating discussions of relevant policy issues with representatives of stakeholder state agencies, ERCOT is increasing the robustness of long-range planning in the ERCOT region while permitting regulatory personnel to make informed decisions regarding the future needs of the ERCOT grid.

Award(s): 5 totaling $255.3 million, Smart Grid Investment Grant Program (EISA 1306)
Location: Statewide

- **Center Point Energy, Houston - $200 million**
  Center Point Energy in Houston received $200 million through the Smart Grid Investment Grant Program to complete its current smart meter project and expand the city's Smart Grid. The project includes the installation of 2.2 million smart meters and 550 sensors and automated grid switches.

- **Reliant Energy Retail Services, LLC, Houston - $20 million**
  Reliant Energy Retail Services, LLC, in Houston received $20 million to fund a suite of Smart Grid products, which enables customers to better manage their electricity usage, promotes energy efficiency and lowers overall energy costs.

- **Golden Spread Electric Cooperative, Inc., Amarillo - $17.3 million**
  Gold Spread Electric Cooperative, Inc., in Amarillo received $17.3 million to fund the installation of 70,000 AMI meters and associated communication equipment, 800 communication devices from substations to Members' offices, 9,000 load control switches and associated communication equipment, SCADA and distribution system management equipment.

- **Denton County Electric Cooperative, Corinth - $17.2 million**
  Denton County Electric Cooperative in Corinth received $17.2 million to fund the installation of advanced metering infrastructure (AMI) including smart meters, a two-way communication network, computer systems and distribution of accurate information about customer electricity consumption.

- **El Paso Electric, El Paso - $1 million**
  El Paso Electric received $1 million to fund the installation of DMS to increase the monitoring and control of the distribution system and improve the restoration of the system during emergency conditions. Key project components include fault location, isolation and system reconfiguration.

Award(s): 3 totaling $27.4 million, Smart Grid Regional and Energy Storage Demonstration Project (EISA 1304)
Location: Austin, Dallas

- **Center for the Commercialization of Electric Technologies, Austin - $13.5 million**
  The Center for the Commercialization of Electric Technologies in Austin received $13.5 million to demonstrate the management of the fluctuations in increasing levels of wind power, up to 10,000 MVA by 2020. Simultaneously, the project is creating, through improved system monitoring capabilities, enhanced operator visualization and improved load management. This program includes the installation of synchrophasors to enhance monitoring of grid conditions as remote wind resources move through the system and the use of integrated Smart Grid technologies in a community of 3,000 customers, including household and community battery storage, smart meters and homes equipped with 1-3 kW solar photovoltaics.

- **Pecan Street Project, Inc., Austin - $10.4 million**
  Pecan Street Project, Inc., in Austin received $10.4 million for the Energy Internet Microgrid, located in a large mixed-use infill development site. The grid includes linking distributed energy

resources, 1,000 residential and 75 commercial two-way meters and customer technologies and plug-in electric vehicle (PEV) charging sites. The project is located at a unique site chosen for its existing platform of advanced energy technologies and sustainability features and will be implemented by a unique Texas not-for-profit corporation created to research, develop and implement Smart Grid clean energy systems.

- **Oncor Electric Delivery Company, LLC, Dallas - $3.5 million**
  Oncor Electric Delivery Company, LLC, in Dallas received $3.5 million to demonstrate the use of Dynamic Thermal Circuit Ratings (DLR) on eight circuits in the Dallas area to reduce transmission-line congestion and increase ampacity by 15 percent. As the data and results of utilizing DLR are verified and become better understood, transmission systems can be utilized to their full capacity to decrease congestion.

Award(s): $1.4 million, State Assistance on Electricity Policies
Location: Austin
The Texas Public Utility Commission in Austin received $1.4 million for State Assistance on Electricity Policies. This project funds states and their Public Utility Commissions (PUCs) to hire staff trained to facilitate the review of time-sensitive requests approving electric utility expenditures undertaken as part of the Recovery Act.

Award(s): 3 totaling $2.8 million, Smart Grid Workforce Training
Location: Houston, Dallas, Austin

- **University of Houston, Houston - $2.5 million**
  The University of Houston received $2.5 million to develop a program that provides a coherent career progression from entry-level hands-on training to the attainment of advanced skills and degrees necessary for high level design and management functions.

- **Oncor Electric Delivery Company, LLC, Dallas - $189,000**
  Oncor Electric Delivery Company, LLC, in Dallas received $189,000 to prepare Oncor's system planners and system protection engineers to successfully achieve a Smart Grid that effectively incorporates the growing generation of renewable energy in Texas. This project supports Oncor's workforce development efforts for the construction, operation and maintenance of over 850 miles of new competitive renewable energy zone lines, four new wind collection stations and four new 345 kV switching stations throughout Texas.

- **Austin Community College District, Austin - $87,000**
  Austin Community College District received $87,000 for the Preparing Occupations for Lineman Education (POLE) program. This project develops a Utility Line worker Certificate and Associate Degree curriculum to train students to install, maintain and repair electric power lines. This degree qualifies graduates to work on utility lines, an occupation critical to enabling Smart Grid functionality.

TRANSPORTATION – 5 projects totaling $40.4 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): $38.1 million, Clean Cities Alternative Fuel and Vehicles (AFV) Grant Program
Location: Arlington, Austin, Waco

- **North Central Texas Council of Governments, Arlington - $13.2 million**
  The Railroad Commission of Texas in Arlington received $13.2 million to deploy 382 alternative fuel vehicles, develop nine alternative fueling sites and install four electric chargers.

- **Railroad Commission of Texas, Austin - $12.6 million**
  The Railroad Commission of Texas in Austin received $12.6 million to deploy 882 LPG vehicles and develop 35 LPG fueling sites.

- **Texas State Technical College, Waco - $12.3 million**
  Texas State Technical College in Waco received $ 12.3 million to deploy 100 LPG vehicles and develop 184 LPG fueling sites.

Award(s): 2 totaling $2.3 million, Enabling Fuel Cell Market Transformation
Location: Houston, San Antonio

- **Sysco of Houston, Inc., Houston - $1.2 million**
  Sysco of Houston, Inc., received $1.2 million for its Fuel Cell Lift Truck Deployment project.

- **Nuvera Fuel Cells, Inc., San Antonio - $1.1 million**
  Nuvera Fuel Cells, Inc., in San Antonio received $1.1 million to equip a major supermarket chain with high-performance, clean-energy fuel cells for its hundreds-strong forklift fleet.

CARBON CAPTURE & STORAGE – 14 projects totaling $773.2 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 $504 million, Expand and Extend Clean Coal Power Initiative Round III
Location: Penwell, Thompsons

- **Summit Texas Clean Energy, Penwell - $350 million**
  Summit Texas Clean Energy in Penwell received $350 million to accelerate the development of advanced coal technologies for commercial-scale carbon capture and storage.

- **NRG Energy, Thompsons - $154 million**
  NRG Energy received $154 million to construct a 60 MWcarbon capture demonstration facility at the company's W.A. Parish Unit 7 in Thompsons. The six-year project demonstrates an innovative integration of several important advances in carbon capture and sequestration technologies.

Award(s): 6 totaling $262.5 million, Industrial Carbon Capture and Storage Applications
Location: Statewide

- **Air Products & Chemicals, Inc., Port Arthur - $253 million**
  Air Products & Chemicals, Inc., received $253 million to capture and sequester one million tons of carbon dioxide per year from existing steam-methane reformers in Port Arthur. The project team includes Air Products & Chemicals, Denbury Onshore LLC, the University of Texas Bureau of Economic Geology and Valero Energy Corporation.

- **Skyonic Corporations, Austin - $3 million**
  Skyonic Corporations in Austin received $3 million for the SkyMine process, which removes carbon dioxide from industrial wastestreams and generates saleable carbonate and / or bicarbonate materials.

- **Conoco Phillips, Sweeny - $3 million**
  Conoco Phillips in Sweeny received $3 million to demonstrate new advancements that improve conversion efficiency and economies of scale for CCS systems at a petcoke-based 683-megawatt integrated gasification combined cycle (IGCC) power plant adjacent to its existing refinery in Sweeny, Texas. About 85 percent of the carbon dioxide from the process stream will be captured using a number of other commercially available technologies that will be integrated with a conventional IGCC plant in a unique, efficient design.

- **Praxair, Inc., Houston - $1.6 million**
  Praxair, Inc., in Houston received $1.6 million for engineering studies pertaining to integration of carbon dioxide capture VPSA with operating Steam Methane Reformer. Design of a carbon dioxide capturing system includes heat and mass balance, rotating equipment evaluation, process and instrumentation drawing development and preliminary equipment layouts.

- **CEMEX, Inc., Odessa - $1.5 million**
  CEMEX, Inc., in Odessa received $1.5 million to demonstrate RTI International's dry sorbent carbon dioxide capture technology at one of its cement plants. CEMEX is designing and constructing a dry sorbent carbon dioxide capture and compression system, pipeline and injection station. This commercial-scale carbon capture and sequestration demonstration project will remove up to 1 million tons of carbon dioxide.

- **Sunrise Ridge Algae, Houston - $511,000**
  Sunrise Ridge Algae in Houston received $511,000 for a project involving the cultivation of algae with cement plant waste stack gas carbon dioxide for harvest and conversion to biocrude feedstock via catalyzed thermochemical conversion technology.

Award(s): $4.6 million, Geologic Sequestration Site Characterization
Location: Austin
The University of Texas at Austin received $4.6 million to conduct a regional evaluation of storage opportunities in the Miocene aged formations for Texas offshore state lands. The project completes a detailed geologic characterization site assessment of specific reservoirs that are promising for carbon dioxide storage. The project is designed to help meet the goal of characterizing geologically representative formations that may be used to economically store anthropogenic carbon dioxide emissions.

Award(s): 5 totaling $2.1 million, Geologic Sequestration Training and Research Grant Program
Location: Statewide

- **University of Texas at Austin - $941,000**
  The University of Texas at Austin received $941,000 to promote knowledge and technology transfer focusing on four primary objectives aligned with the needs of the emerging CCS industry in Texas, Louisiana and Florida.

- **University of Texas at El Paso - $300,000**
  The University of Texas at El Paso received $300,000 to conduct research to measure fundamental flame characteristics of oxy-fuel combustion and investigate its influence on combustor operability parameters. This project supports at least two graduate students during the research effort.

- **University of Houston System, Houston - $299,000**
  The University of Houston received $299,000 to train at least two graduate students through fundamental research based on numerical simulation of advanced seismic data ideal for mapping of caprock integrity and potential leakage pathways. The project uses numerical simulation to test rapid methods of gathering multi-component, full azimuth data ideal for this purpose.

- **University of Texas of the Permian Basin, Odessa - $299,000**
  The University of Texas of the Permian Basin in Odessa received $299,000 to take industry level carbon dioxide training and create modules for undergraduate and graduate students. Data and presentations from industry Carbon Dioxide Flooding Schools & Conferences, Carbon Mgt Workshops & other venues are being tailored to provide introductory reservoir & aquifer training, state-of-the-art methodologies, field seminars, site visits and case studies for students. The modules are being made available to other regional and national universities. This project supports graduate students during the research effort.

- **University of Texas at El Paso - $289,000**
  The University of Texas at El Paso received $289,000 to develop high-fidelity computational methods based on a variational approach that complements the ongoing research in the small-angle neutron scattering (SANS) technique being done at ORNL. This provides unique, pore-size-specific insights into the mechanisms of carbon dioxide sorption in coals and to characterize the density and volume of the sorbed carbon dioxide. These factors are key to determining efficacy of potential sequestration reservoirs. This project is a collaborative effort between experts from ORNL and Shell Oil Company. This funding supports graduate and undergraduate students during the research effort.

ENVIRONMENTAL CLEANUP – 1 project totaling $11,000

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): $11,000, Title X Uranium / Thorium Reimbursement Program
Location: Bellaire
Petromics Company in Bellaire received $11,000 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 (U) and thorium (Th) during the Cold War era for DOE and its predecessors. The funding provided by ARRA may enable to the licensees of these sites to accelerate the completion of cleanup programs and eliminate the environmental risks at these sites.

SCIENCE AND INNOVATION – 11 projects totaling $17 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): $13.1 million, Energy Frontier Research Centers (EFRCs)
Location: Austin
The University of Texas at Austin received $13.1 million to pursue fundamental research on charge transfer processes that underpin the function of molecular materials for photovoltaic and electrical energy storage applications.

Award(s): 4 totaling $3.2 million, Energy Sciences Fellowships and Early Career Research Program
Location: Statewide

- **University of Texas at Austin - $953,000**
  The University of Texas at Austin received $953,000 for an experimental research program on chirality.

- **University of Texas at Arlington - $750,000**
  The University of Texas at Arlington received $750,000 for model-independent dark-matter searches at the ATLAS experiment as well as applications of many-core computing to high energy physics.

- **Southern Methodist University, Dallas - $750,000**
  Southern Methodist University in Dallas received $750,000 for a project involving integrated analysis of particle interactions at hadron colliders.

- **Texas A&M University, College Station - $750,000**
  Texas A&M University in College Station received $750,000 for a project titled "Ton Scale Germanium: Beyond Zeptobarn WIMP cross-section."

Award(s): 5 totaling $734,000, Small Business Innovation Research (SBIR) / Small Business Technology Transfer (STTR) Round 1
Location: Statewide

- **Trinity Thermal Systems, Wichita Falls - $150,000**
  Trinity Thermal Systems in Wichita Falls received $150,000 to develop a thermal energy storage system that can be retrofitted onto air conditioning and heat pump systems in small to mid-sized commercial buildings. This cost effective technology reduces peak demand, increases overall efficiency and integrates renewable energy systems into a smart electric grid.

- **Lynntech, Inc., College Station - $150,000**
  Lynntech, Inc., in College Station received $150,000 for a project involving electrokinetic sorting of carbon nanotubes.

- **Solarno, Inc., Coppell - $149,000**
  Solarno, Inc., in Coppell received $149,000 for a project involving parallel tandem organic solar cells with carbon nanotube sheet interlayers.

- **Encryptor, Inc., Plano - $148,000**
  Encryptor, Inc., in Plano received $148,000 for a project involving smart low-cost controller chips for grid-friendly household appliances.

- **Signalogic, Inc., Dallas - $137,000**
  Signalogic, Inc., in Dallas received $137,000 for a project involving a data center energy efficiency increase using DSP arrays.

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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/Texas

HOUSTON

Sysco deploys hydrogen powered pallet trucks

Food service distribution company Sysco celebrated the grand opening of its highly efficient distribution center in June in Houston. As part of Sysco's efforts to reduce its carbon footprint, the company deployed almost 100 pallet trucks powered by fuel cells that create only water and heat as by-products.

Project helps save energy, space and time

The hydrogen fuel cell project' s cost was partially covered by funding from a $1.2 million grant provided by the American Recovery and Reinvestment Act through the U.S. Department of Energy's Fuel Cell Technologies Program. The total project cost was $3.3 million.

The 98 new Raymond Corporation pallet lifts are powered by Plug Power Inc.'s GenDrive fuel cell units and were put to work immediately.

One major advantage of fuel cell-powered lifts is that they operate better in cold temperatures while moving frozen goods. Lead-acid batteries do not react well under cold temperatures, but fuel cells continue to meet or exceed Sysco's needs, despite temperatures in refrigerated areas that reach about 8 degrees below zero.

Using fuel cells also frees up space and cuts the time needed to recharge lead-acid batteries. The lifts can be recharged in about a minute. The company calculates that it is saving about $24,000 per quarter on labor costs that would have been associated with changing out lead-acid batteries during each shift change.

Sysco's move to fuel cells in Houston:

- 72 Raymond Model 8400 pallet trucks
- 26 Raymond Model 7400 Reach-Fork trucks
- Saving $24,000 quarterly on labor costs

"Sysco has been a great customer to work with throughout GenDrive's field testing, and we're excited to see them now convert a full Raymond fleet from batteries to fuel cells," Plug Power CEO Andy Marsh stated in a news release. "Sysco is a market leader in adopting green technologies, and we are proud to be a partner in their successful efforts to commercial alternative ener gy resources."

Sysco is still in the process of comparing its costs of rechar ging the old lead-acid batteries with the hydrogen refueling costs to see how much money it is saving.

Illinois and Texas towns see weatherization boost

Like so many other towns, both Springfield, Ill., and Lubbock, Texas, have their share of people living in poorly insulated homes equipped with old, energy-wasting appliances and cracked siding. But now, with millions of dollars in Recovery Act funds going towards weatherization programs, more families will stay warmer in the winter, cooler in the summer, and, most importantly, save money.

"It cropped about a hundred bucks off my bill in the cold, cold winter," says Springfield resident Donald Dagget, a 78-year-old retired beauty salon owner who had his 1937, two-bedroom bungalow weatherized in October. "I was very thankful for that. Even though I'm in a house all paid for, I don't have a lot of money."

The Department of Community Resources in Sangamon County, Ill., where Donald lives, typically tackles about 95 homes a year with their $520,000 budget, but a 60 percent increase in weatherization funding will put that number around 320 this year.

Lubbock, Texas, which has $5 million available for weatherization programs from the Recovery Act, may not have to cope with freezing temperatures Illinois endures, but it certainly has its share of high winds and chilly nights.

"If the weather is cold and the wind is blowing….uhhh," says Joe Rangel, the contract coordinator in the office of Community Development in Lubbock. "Most homes that need the protection are in the city of Lubbock, older types that need some kind of work: windows, doors, insulations."

Local service providers in Lubbock weatherized 45 homes last year with their funding, which was about $200,000. This year, about 600 eligible residents who signed up will have their homes worked on because of the additional funds. The Department of Energy's Weatherization Assistance Program allows up to $6,500 in weatherization services per home for eligible families living at up to 200 percent of the federal poverty level.

"That list keeps increasing because people hear more and more about it," says Joe, who hopes to get through the list over the next two years. "It's a snowball effect."

The projects are also putting more people to work in both areas.

Joe says 14 contracting companies in the area have been employed to perform the work, each with a crew of four or five. "One of the contractors added more people to the crew," he says. "I can assume the rest are doing the same thing."

Sharmin Doering, the executive director for the weatherization program in Illinois' Sangamon County, says that because of her county's Recovery Act weatherization funds, the local firms hired to do the work have brought on 14 new workers.

Thanks to the workers who insulated his attic and retrofitted his water heater, Donald is seeing the financial benefits during the cold months in Illinois. His February heating bill went from $198 in 2009 to $100 this year.

"I've been very frugal all my life," Donald says. "I could survive [without the weatherization], but I knew it was going to be difficult. You don't throw money away"

11 Navy sites to save $871,000 yearly

The U.S. Navy's Naval Facilities Engineering Command (NAVFAC) Southeast - based in Jacksonville, Fla. - is using $69.3 million in funding from the American Recovery and Reinvestment

Act to install solar energy systems and upgrade a total of 32 buildings at 11 naval installations across Florida, Mississippi and Texas.

Through this project, the buildings are getting solar and roofing upgrades that will save the Navy $871,935 annually. The solar energy systems are expected to generate 9,399 MWh of clean, renewable energy during first full year after construction. The process will involve hundreds workers across the projects.

Navy Project Manager and Electrical Engineer Lynwood Taylor is overseeing the entire process to make sure the Navy spends its money in ways that will progress the military toward its energy goals, create private-sector jobs and reduce dependence on foreign oil.

Upgrading roofs, integrating solar

At the Naval Construction Battalion Center in Gulfport, Miss., six buildings are slated to see roof upgrades that include a total of 500 kW of building-integrated photovoltaics using almost $7 million of the $13.8 million awarded for Navy's BIPV upgrades in Mississippi. (Additional funding went to Naval Air Station Meridian, which also recently retrofitted a hangar there.)

One stipulation on the Navy's Recovery Act funding for these projects is that the BIPV must be used in conjunction with roofing improvements at the buildings involved.

"I essentially make sure the Navy's money gets spent the way we told Congress we were going to spend it," Taylor says. "We have to make sure we execute this project on suitable buildings."

To find the buildings best suited for the upgrade, the Navy engaged Atlantic Contingency Constructors, based in Norfolk, Va. This process began last year as the company provided the Navy with recommendations of potential sites after evaluating the buildings. The Navy reviewed the recommendations and generated a final list of the buildings it wanted to include in the project, and ACC began detailed site surveys in January where it conducts structural analyses and estimates costs.

"We're currently reviewing their designs, and Gulfport's buildings should be phased in and begin construction later this fall," Taylor says. Installations in Texas will likely see the first upgrades, expected to begin in early September. All of the projects are expected to be complete by the end of 2011 with ACC managing design firms and contractors at the sites.

By the numbers

- $69.3 million awarded to NAVFAC Southeast in Recovery Act funding
- 32 buildings receiving solar and roofing upgrades
- 11 Naval installations involved
- 3 states involved
- 5,150 kW building-integrated photovoltaics to be installed across all projects
- 9,399 MWh of energy generated across all projects in first full year after construction, based on an estimate of PV running 365 days per year, five hours per day
- $871,935 cost savings per year across all projects, based on 2009 electrical consumption
- Up to 275 subcontractors will work on roofing and solar projects in the Southeast

Far-reaching impact

While this project will help the Navy meet its goal of 50 percent renewable on-shore energy by 2020, it's also having an impact on the private sector. ACC will hire two to five subcontractors per base during the construction phase, meaning about 25 workers will be at each site for about nine months. That could mean as many as 275 workers will see the benefits of projects at these 11 installations.

"The real job creation potential is with the construction subcontractors," Skip Dunham, PV project manager for ACC, says. "We're managing the project, but the design firms and solar installers will be the ones getting a large amount of the workload and seeing where the stimulus comes in on this project."

Taylor expects the project to make an impression on people not directly involved with the projects as well.

"I think the long-term impact will be really good," he says. "I came from the private sector, and I know so many times companies will look and say , 'this is what the military is doing.' We [Navy] try to be on the leading edge of technology and hope that others follow suit with what we're doing — opening a doorway to move renewable ener gy technologies forward."