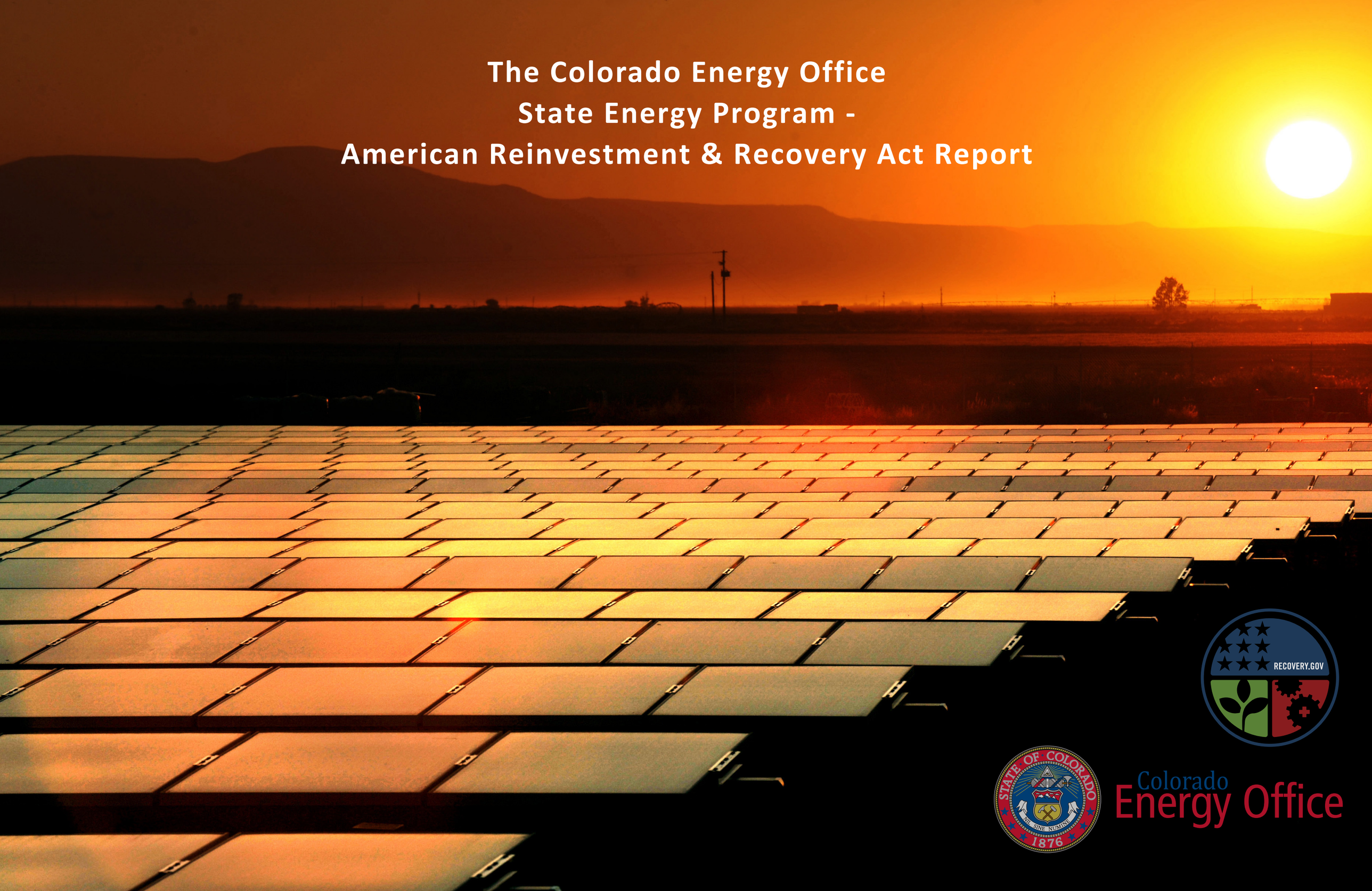
The Colorado Energy Office
State Energy Program -
American Reinvestment & Recovery Act Report



Colorado
Energy Office

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Executive Summary

Overview

In 2009, The Governor's Energy Office (GEO)[1] received an American Reinvestment and Recovery Act (ARRA) allocation of $49,222,000 through the U.S. Department of Energy's (DOE) State Energy Program (SEP). The DOE stated goals for the SEP-ARRA grant were: *to increase energy efficiency to reduce energy costs and consumption for consumers, businesses and government; reduce the U.S. reliance on imported energy; improve the reliability of electricity and fuel supply and the delivery of energy services; and reduce the impacts of energy production and use on the environment.*

The GEO viewed this allocation as an important one-time opportunity to remove market barriers to the development of energy efficiency and renewable energy resources statewide. The office also felt it was important to ensure that the momentum and impact of the allocation be sustained post-ARRA.

[1] *Colorado State Legislation changed the name of the Governor's Energy Office to Colorado Energy Office on May 24, 2012.*

Building a Strategic Plan

Colorado was well positioned to effectively implement SEP ARRA. In 2007-08 GEO established partnerships with municipal and rural electric utilities, local non-profit organizations, and local governments to advance community-driven programs toward sustainable energy outcomes. The GEO staff was becoming increasingly knowledgeable about state resources (and the lack of them), and had deployed four regional representatives across the state to live and work in communities outside of Denver. Their role was to be a liaison to the Denver office, to identify barriers and energy issues unique to specific communities, and to help find solutions.

Upon notification of the SEP-ARRA distribution, the GEO created a strategic plan outlining a vision for the allocation with goals and objectives, resources required, and a timeline. It was determined early in the process that three core elements were key to design and implementation of Recovery Act dollars:

- the funds would be allocated statewide
- the funds would be used for programs to remove the primary barriers to a broad scale deployment of energy efficiency and renewable energy
- the funds would develop a sustainable infrastructure to ensure, where possible, the continuation of programs and projects developed after ARRA funds ran out

The result of this planning was a three-prong approach to provide:

- Access to Information
- Access to Capital
- Access to Services

All SEP-ARRA programs and projects would stem from at least one of these core principles. From this, eleven Market Titles were created, and programs and projects were developed under them. This streamlined approach provided organizational structure to facilitate the administration, reporting, and accountability of the funds.

It was also determined that the GEO would consider all of funds available comprehensively, in order to coordinate and support high-level goals, i.e. "leverage" additional funds received (including the State Energy Efficient Appliance Rebate Program (SEEARP), and the Energy Efficiency and Conservation Block Grant (EECBG)), and would use local incentives and utility rebates, and partner with local governments, utilities and NGOs to minimize overhead and maximize the amount of money and resources available to implement this robust plan.

The SEP-ARRA funds were distributed into each market title and assigned a program manager, who then developed a program outline which included projects, scope, and budget. Criteria were developed to guide the selection of projects: cost, funds leveraged, and energy saved. Each project, overseen by GEO leadership, was expected to have specific deliverables. The selection processes also included the validation of statewide deployment of funds.

Date	Milestones and Significant Procurements	Implementation Partner(s)
2009-Feb	ARRA legislation enacted	Congress
2009-Mar	SEP-ARRA funding opportunity released	DOE
2009-Mar	Colorado Economic Recovery Oversight Board created	Governor's Office
2009-May	Strategic Plan developed, application submitted to DOE	Stakeholders, Governor's Office
2009-Jun	DOE approves GEO SEP-ARRA plan and work begins	DOE
2009-Jul	First round of NEED sub-grant application posted	Multiple
2009-Aug	Recharge Colorado RFP issued	State Procurement Office
2009-Sep	Main Street Efficiency Initiative RFP issued	State Procurement Office
2009-Nov	Rebate fulfillment firm RFP issued	State Procurement Office
2010-Jan	First round of NEED sub-grants contracted	
2010-Apr	Recharge Colorado website goes live and rebates become available to the public	Helgeson, Vladimir Jones, BBB, utilities, contractors, retailers
2010-Jun	Renewable Energy Development Team RFP issued	State Procurement Office
2010-Jul	Renewable Energy Development Team firm selected	SenTech (SRA International)
2010-Dec	Final round of grant awards issued by GEO	State Procurement Office
2011-Dec	Rebate Program closed	Helgeson, utilities, contractors
2012-Feb	Measurement and Verification work ends	Nexant
2012-Mar	Recharge Colorado transferred to non-profit entity	www.RechargeColorado.org
2012-Apr	SEP-ARRA grant closed	

Market Titles

Brief Overview

Public Information: As Colorado's signature SEP ARRA program, and certainly the most visible, Recharge Colorado embodies GEO's attempt to capitalize on the unique nature of ARRA to promote consumer energy efficiency. The development and implementation of the Recharge Colorado website fell under the Public Information market title and was the conduit to distribute ARRA-funded energy efficiency and renewable energy rebates.

Recharge Colorado, a comprehensive website resource for Coloradans, was created to provide access to timely and accurate information about energy efficiency and renewable energy measures including practical tips to manage energy use, financial incentives and tax credits to help reduce the cost of installations, and a list of service providers. It became the primary statewide communication vehicle for SEP-ARRA funds. With the unprecedented success of Recharge Colorado, the GEO and DOE worked together to move the program outside of state government where it was formed into an independent nonprofit organization. The Recharge Colorado non-profit will continue to provide information and issue rebates in close coordination with utilities, including the development of new opportunities such as water efficiency programs.

Capital Investment: Recognizing that there are market barriers that inhibit the growth of innovation ecosystems, finance barriers in particular, the GEO used approximately $16,245,080 in ARRA funding to establish a revolving loan fund (RLF). The RLF is designed to provide essential capital to early-stage companies and commercial projects utilizing innovative energy technologies that are incapable of accessing capital from traditional sources. The idea is to provide these companies and projects the funding required to deploy innovative, commercially-available technologies in an effort to create jobs and spur traditional lenders to fill these finance gaps in the future.

In the **Commercial Building - Existing** market title, SEP-ARRA funds allowed Colorado to expand the already successful Energy Performance Contracting (EPC) program, which allows organizations to pay for energy efficiency measures through the savings generated. The GEO also launched a new energy efficiency program – The Main Street Efficiency Initiative (MSEI) – specifically for small business owners, providing tools to analyze and manage utility bill information, assistance in identifying energy conservation measures, incentives to implement efficiency projects and access to available financing. A northern Colorado MSEI participant, the Platte River Power Authority, used a subsidized HVAC tune-up as a starting point for small building owners, and has reached over 40 buildings to date.

Under the **Commercial Building - High Performance** market title, the GEO expanded the High Performance Building (HPB) Program to provide technical design assistance, thereby removing a resource/capability barrier preventing schools and governments from including energy efficient measures in new construction. Ambient Energy, a contractor in the HPB program, provided third-party technical assistance to the Walking Mountains Science Center in Avon, Colorado. Ambient performed energy modeling and plan review during the design process, enhancing both the energy efficiency and renewable energy features of the project, which allowed the Center to attract private funds and apply for LEED Platinum status.

Under the **Greening Government** market title, GEO worked closely with state agencies to reduce their energy use by identifying technologies to lower energy costs and lessen the environmental impact of state government operations. A statewide energy inventory revealed that many state desktop computers are left running on full power when not in use. The GEO funded the purchase of the Big Fix Power Management Software, which was installed on 11,000 state-owned computers.

The software puts the computer into sleep mode after a period of inactivity and automatically saves all user data. While purchase and installation of the Big Fix Management Software cost around $100,000, the state expects to save from $15-$45 a year for each of the 11,000 computers using it, with total savings in the hundreds of thousands of dollars, and a payback time of less than one year.

While renewable energy projects were spread across several market titles, three market titles were devoted to the field: Renewable Energy Program Consultants, Renewable Energy Education and Outreach, and Renewable Energy Rebates and Grants.

Most of the **Renewable Energy, Outreach** and Education funding went to the training of technicians who will provide the skilled labor necessary to install renewable energy technologies. Courses in solar installation and home energy auditing were organized and conducted by community colleges around the state, funded by SEP-ARRA Green Jobs grants.

Renewable Energy Program Consultants: GEO contracted with a private-sector firm to create the Renewable Energy Development Team (REDT). The REDT reviewed and guided potential renewable energy projects through the development process. The REDT most notably streamlined the Federal Energy Regulatory Commission's (FERC) small-hydro permitting process for the State which was complex and time consuming. The REDT created an avenue to make small-hydro permitting more economical and accessible. In July of 2011 the REDT successfully completed its first hydropower conduit exemption application to FERC in just two months, a significant reduction over a process that historically took up to three years. This opened the door for adding small hydro-power generation to existing ditches, canals, and dams, thereby creating a new revenue stream applicable to many rural areas in the State.

The programs assembled under the market title **Renewable Energy, Rebates and Grants**, funded renewable energy rebates offered through Recharge Colorado and provided sub-grants for the installation of wind turbines and photovoltaic arrays, biomass feasibility studies, assorted geothermal projects, and low emission transportation fuels projects.

Colorado has extensive geothermal resources, and the SEP-ARRA funding allowed the GEO to more fully develop these resources by supporting the growth of the industry.

The **Residential Energy Efficiency** market title provided resources to improve the access to energy efficiency information in the residential sector and provided rebates issued through Recharge Colorado. The Rebate program was the expansion of the GEO's previous incentives (Insulate Colorado) and offered rebates statewide in communities that previously had no access to these incentives. This was important to develop consumer interest in energy efficiency and to build a contractor network to support this activity.

While homeowners have long recognized the value of energy efficiency and renewable energy measures in lowering their monthly utility costs, those measures are not mentioned in the listing of the house attributes at the time of sale, nor considered in the market valuation. The GEO recognized this as a barrier to implementation of energy efficiency, and used SEP-ARRA funds to award a total of five sub-grants to address the issue: two went to improve the Multiple Listing Service (MLS) databases used for home sales, and three for training of those who would use the databases: real estate professionals, appraisers, and lenders.

Funding under the **Transmission** market title helped continue the exploration of Colorado's transmission development opportunities, and produced the Strategic Transmission and Renewables (STAR) report, a culmination of the electric power sector, renewables, and transmission analyses conducted by the office between 2007 and 2010.

Under the **Utilities** market title, GEO conducted a set of major education and outreach activities involving climate policy, electric generation, and general energy profile data for state utilities and was actively engaged in the promotion of energy efficiency and renewable energy at the Colorado Public Utilities Commission. Additionally, GEO partnered with Spirae Inc. and other clean energy organizations to develop a smart grid training center.

Third-Party Verification

In a unique step toward transparency and accountability, the GEO selected Nexant, Inc. to conduct a Measurement and Verification project of the programs and projects funded by all ARRA allocations. Nexant, Inc. is an independent energy consulting and technology company that provides technical, economic, and planning services to large organizations, including energy companies, financial institutions, and government agencies at all levels.

Nexant surveyed programs from all three ARRA funding sources: the State Energy Program (SEP), the State Energy Efficient Appliance Rebate Program (SEEARP), and the Energy Efficiency and Conservation Block Grant (EECBG) Program. Due to the diverse nature and size of the many projects, Nexant used a sampling approach that followed the guidelines established for ARRA impact evaluations in the DOE SEP and EECGB Program Notices. The Project also sought to integrate and develop consistency of activities with the National Evaluation of ARRA funds, expected to take place in late 2012 – 2013.

Nexant and its sub-contractors, Group 14 Engineering and Research Into Action, evaluated six SEP market titles.

The Nexant group collected and analyzed data for projects completed through December 31, 2011, conducted interviews, and presented their findings in a report to the GEO dated April 11, 2012. Nexant noted "Based on this evaluation of these evaluated Colorado GEO ARRA funded energy efficiency activities, the following accomplishments were realized: Annual energy bills were reduced by $16,215,000, and $164,825,000 will be saved across the measure life in present dollar value. The rebate and grant programs leveraged at least $8 of participant and other program funds for every GEO ARRA dollar spent." The following table outlines Nexant's evaluation of gross verified site energy savings through December 31, 2011. Site savings reflect consumer savings which may be higher at the ultility level.

Market Title	Gross Verified Electricity Savings (kWh)		Gross Verified Gas Savings (MMBtus)		Total Gross Verified Savings (MMBtus)	
	Annual	Lifetime	Annual	Lifetime	Annual	Lifetime
Capital Investments	10,615,549	184,153,278	110,142	1,921,444	146,362	2,549,775
Commercial Buildings Existing	18,453,062	268,369,134	97,037	1,429,459	159,999	2,345,135
Commercial High Performance Buildings	5,685,794	85,286,911	23,334	350,006	42,734	641,005
Greening Government	4,046,103	20,958,812	0	0	13,805	71,511
Renewable Energy Programs	3,478,858	77,275,066	9,892	162,126	21,762	425,789
Residential Buildings	2,408,375	40,294,998	98,199	1,937,538	106,416	2,075,025
Total	44,687,742	676,338,199	338,603	5,800,573	491,078	8,108,239

The rebate and grant programs leveraged at least $8 of participant and other program funds for every GEO ARRA dollar spent.

The Revolving Loan Fund (RLF) provided funds to companies who were unable to aquire them commercially. Due to the nature of the loans provided, it was possible to calculate verified energy savings for only one of the five loans provided through the Capital Investments RLF. However, through Nexant's interviews with RLF recipients, the following qualitative accomplishments were reported:

- The CEO of one company noted that the RLF loan "saved his company" enabling them to begin manufacturing to fulfill existing orders. 16 jobs were created and retained in Colorado.

- Another CEO noted that without the loan from the RLF, they would have been forced to move their operations from Colorado to Europe eliminating 113 jobs in Colorado.

- Another owner noted that without the RLF loan his company would have had to significantly cut back operations, lay off more than 13 employees and discontinue development of a new product.

- A CEO noted the loan enabled his company to purchase 60% of its manufacturing equipment and be first to market with a potential breakthrough technology.

Outcomes

The GEO received $49,222,000 in SEP-ARRA funds. The grant closed on April 30, 2012.

The GEO entered into 223 SEP-ARRA funded contracts and purchase orders. Rebates were distributed in every county in the state, and programs or projects were completed in 109 unique communities. In addition, 119 High Performance Building projects were completed in 50 communities around the state. GEO's diverse set of activities included: funding for utility modeling exercises in support of demand-side management and renewable energy; contractor training seminars, sponsorship of industry events; development of a regional green building code for the Denver Metro area; ENERGY STAR New Homes education; Smart Grid Task Force; collaborative meetings with rural electric co-ops and municipal utilities; biomass feasibility studies; compact fluorescent light bulb buy-downs; purchase of in-home energy measurement devices for circulation through libraries statewide; and funding Energy Managers available to small school districts through the Board of Cooperative Education Services. A complete list of the 223 contracts and purchase orders is available in the appendix to this report.

Market Title	Total Lifetime Gross Verified Savings (MMBtu)	$/ MMBtu	Effective Lifetime	Total Gross Verified Savings (MMBtu)- Annual
Capital Investment	2,549,775	$8	17	146,362
Commercial Buildings - Existing	2,345,135	$1	15	159,999
Commercial Buildings - High Performance	641,005	$4	15	42,734
Greening Government	71,511	$10	5	13,805
Renewable Energy, Rebates & Grants	425,789	$13	20	21,762
Residential Programs	2,075,025	$3	19	106,416
Total	8,108,240	$6	17	491,078

Dollars Leveraged

GEO maximized the SEP-ARRA funds by the strategic leveraging of federal, state, local, utility, and participant dollars. Due to economic conditions in 2009-2010, GEO did not require sub-recipients to contribute matching funds, although matching funds, leverage, or in-kind donations were considered as projects were selected through the competitive solicitation processes.

Rather than create separate systems to distribute rebates funded by various sources, GEO created the Recharge Colorado online platform to deliver information and rebates funded by SEP-ARRA, SEEARP, and EECBG as well as local government and utility partners.

SEP-ARRA funds were used to fund the expansion of the GEO's Energy Efficiency & Renewable Energy Rebates Program. SEP-ARRA funding provided over $6,000,000 in rebates in roughly 7,500 individual rebate payments. Homeowners were motivated by this incentive to make the upgrades to their homes, and spent almost $30,000,000 on installations. This provides a perfect example of SEP-ARRA money spent to boost spending improving the economy, creating jobs in the energy sector, and saving citizens' money through reduced utility costs.

Numbers do not include utility partners.

Rebate Type	*Funds Leveraged	Leverage Ratio	Estimated Energy Saved / Generated
Furnace	$11,971,443.63	11.1	196,401 Therms
Energy Audit	$151,994	2.6	-
Insulation and Air Sealing (Gas)	$2,120,449.80	2.2	98.8248 MMCF
Insulation and Air Sealing (Electric)	$975,242.06	2.2	4,026.608 Mwh
Duct Sealing (Gas)	$70,324 .19	8.5	0.5980 MMCF
Duct Sealing (Electric)	$32,222.09	8.5	13.6076 MMCF
Energy Monitor	$32,618.04	5.6	Not Applicable
ENERGY STAR New Homes	-	-	1,436 Mwh
Solar Photovoltaic (PV) Residential	$7,703,880.77	5.6	2,433,428 kWh
PV Commercial	$4,038,928.96	4.3	1,441,747 kWh
Solar Thermal Residential	$2,113,046.29	3.5	5,353,619,250 btu
Solar Thermal Commercial	$515,522.66	3.7	1,122,156,000 btu
Wind Residential	$74,904	3.6	20,367 kWh
*Total Rebate Programs	$29,800,576 .49	5.2	-

*Funds leveraged is total product cost minus rebate amount.

Challenges

DOE Oversight. While this unprecedented receipt of federal dollars had a positive impact on the State, there were a number of challenges encountered along the way. An immediate issue was the pressure to spend ARRA funds quickly, which was complicated by lagging and or conflicting direction given to the GEO by the DOE. Pressure to "get money out the door" created many concerns as the office struggled to stay on plan, develop tracking and accounting tools, and provide accurate reports to the DOE.

DOE needed to staff-up to handle the increased volume and wisely added a technical assistance team to provide guidance to grant recipients. However, technical assistance did not come from the DOE until months into the program, after GEO had already developed most of its programs and tracking systems.

GEO staffing. The three-year-term of the SEP-ARRA grant proved to be a challenge in terms of staff turnover. As mentioned above, a GEO program manager was assigned to each of the eleven market titles. None of those program managers were still involved with their respective market title at the end of the grant, and only one was still employed at GEO.

As part of the strategic plan to leverage funds, GEO created a rebate program with 18 different rebate types and multiple funding sources (SEEARP, EECBG, SEP-ARRA, state funds, and 23 local and utility partners). This added a level of complexity for GEO accounting and contracts staff that the program staff did not anticipate. Ultimately, GEO brought in a temporary program employee to assist with rebate administration and three temporary accounting employees to assist with payments.

Communication. Due to a great deal of interest in the ARRA funding, GEO staff spent a good deal of time fielding inquiries from the industry, public, and media.

Federal requirements and reporting. The ARRA funding came with detailed requirements for the collection, organization, and submission of many different forms of data. The complexity and volume of the reporting proved to be a significant burden for both the GEO and the sub-grantees. Some sub-grantees found the reporting requirements so onerous that they were unable to accept the funds.

Davis-Bacon Act reporting proved to be so complex that the GEO had to purchase a software package to manage it ($23,000).

The **Buy American** provision was a challenge for many vendors who struggled to find U.S.-made materials at cost effective prices. One such example was Compact Florescent Light (CFL) bulbs. There are very few CFL manufacturers in the U.S., and those found were often two-and- three times the price of bulbs made outside of the U.S. This was also an issue in which GEO received conflicting guidance from DOE.

Historic Preservation. In February 2010, DOE announced that each state should enter into a programmatic agreement with the state energy office, the state historic preservation office, and the DOE. Due to a number of factors, Colorado's agreement was not signed until July 2011, more than two years into the SEP-ARRA grant. Part of the complexity is the fact that each state is allowed just one programmatic agreement, which covers all federal energy grants, including Weatherization and local government EECBG.

As part of the strategic plan to leverage funds, GEO created a rebate program with 18 different rebate types and multiple funding sources.

Lessons Learned

Multiple micro-projects. The GEO's strategic plan was to maximize this already sizable allocation of funds to reach across the state, enhance all segments of the energy sector, and to empower the State's communities to implement energy efficiency enhancements. This resulted in a large number of micro-projects ($25,000 or less) being contracted and distributed. Although this was a sound idea and a unique way to make sure more citizens received the benefits of the SEP-ARRA distribution, the administrative burden of doing so many small projects became overwhelming. Often the time spent on a $25,000 contract was the same as it would have been on a $250,000 contract. Larger projects and/or grants would have ultimately been easier to manage.

Rebate Program. As mentioned previously, the multiple funding sources and rebate types added complexity to the program. Having never delivered a rebate program of this breadth, GEO solicited contractor and industry input and funded a statewide marketing survey to develop the program. Regardless, some rebate types sold out earlier than others. Due to the fact that the rebate partners' funds were geographically limited to the utility or local government boundaries, rebates remained available in some areas of the state while they were sold out in other areas. This resulted in challenges communicating with contractors, rebate applicants, and the media.

To accept rebate funds from partners, GEO had to enter into a contract with each of the 23 partners. Many of the partners were utilities, who set their rebate budgets and launch programs on varied timelines. State procurement requirements made for a number of tight deadlines and "rush" orders for the contracting staff.

Fortunately, Colorado is well positioned to accept future rebate funds and administer those through Recharge Colorado. The new non-profit does not have the burden of government procurement rules when contracting with utilities, and will have more experience in managing rebate programs.

Skilled Labor. GEO found that smaller communities outside of the Colorado Front Range lacked trained contractors to perform the work associated with insulation and renewable energy rebates. GEO partnered with the Colorado Department of Labor and Employment, and industry trade associations to increase training and contractor availability.

Sub-Grant solicitations. GEO found that sub-grant applicants, especially those in the solar thermal industry, had difficulty completing the application. Because GEO evaluated applications based on the potential to save or generate energy, many non-profit applicants lacked the technical knowledge or contractor resources to provide this information. In the future, GEO would consider offering technical assistance to applicants prior to the application submission.

"Shovel-ready". This term was used extensively by Congress and the media early in the SEP-ARRA implementation. Thus, an expectation was set that GEO would look to fund construction-type projects. While SEP-ARRA funds were applied to a number of building retrofit "construction-like" projects, GEO's strategy was to build sustainable programs and remove barriers to information, capital, and services. In the future, the office may benefit from maintaining a list of shovel-ready energy projects (similar to transportation agencies) in addition to an overall policy and program strategy that can be communicated on a regular basis.

Best Practices

Using EECBG funds, GEO developed the Community Energy Coordinators (CECs) program for Colorado's rural and mountain communities. CECs are local government or community non-profit employees who received personalized guidance from the GEO, have access to clean energy tools and programs, and participate in twice-monthly training and networking sessions. GEO created the CEC program to develop local capacity to ensure that all geographic areas of the state would benefit from ARRA. The CECs were instrumental in promoting ARRA grants and rebates, as well as the state's Weatherization program. CECs were supported by four GEO staff members, known as the Regional Representatives (RRs).

GEO hired a Minority Outreach Coordinator to work with minority communities statewide. Like the CECs, this position helped to inform and garner participation from populations that otherwise may not have participated in the ARRA activities.

GEO was fortunate to have a number of innovative energy efficiency and renewable energy policies in place in 2009, as well as a solid industry presence and momentum in the energy efficiency and renewable energy space. This foundation allowed GEO to develop a strategy to make the most of this funding.

EECBG, SEEARP, and SEP-ARRA funds were used for rebates, NEED grants, Recharge Colorado, the Main Street Efficiency Initiative, and outreach activities. This allowed GEO to maximize internal staff resources and processes and implementation partners.

A variety of activities focused on building capacity for the long term. Not only did the ARRA funding keep industry workers employed during a very difficult time, it helped to build momentum for continued progress to reduce energy consumption in the state.

Appendix 1: SEP-ARRA Contracts Awarded

Contracts Awarded by the Governor's Energy Office, 2009-12, Using SEP-ARRA Funding

Market Title	Program or Grant Type	Vendor or Sub-recipient	City	County	Contract Amount	Scope of Work
Capital Investment	CO Center Renewable Energy Economic Development	National Renewable Energy Laboratory	Golden	Jefferson	$ 615,413.00	Develop multi-agency collaboration to develop Colorado's renewable energy industry
Capital Investment	GEO NEED Grant	Astralux Environmental Solutions, LLC	Alamosa	Alamosa	$ 59,940.00	Installation of 19.74kW solar PV Array
Capital Investment	GEO NEED Grant	Aurora Community Mental Health	Aurora	Arapahoe	$ 29,739.00	Lighting retrofit at five AuMHC facilities
Capital Investment	GEO NEED Grant	Aurora Community Mental Health	Aurora	Arapahoe	$ 23,100.00	Replacement of old boilers with 99% efficient units
Capital Investment	GEO NEED Grant	Big Agnes, Inc.	Steamboat Springs	Routt	$ 12,064.00	Installation of 5kW solar PV Array at camping gear business
Capital Investment	GEO NEED Grant	Buena Vista SD R31	Buena Vista	Chaffee	$ 130,000.00	Replacement of HVAC system and controls at P.E. facility
Capital Investment	GEO NEED Grant	Calhan Public School District R-J T-1	Calhan	El Paso	$ 305,000.00	Replace 1970s propane boilers with ground source heat pump system
Capital Investment	GEO NEED Grant	City and County of Broomfield	Broomfield	Broomfield	$ 12,500.00	Replace 56 electric bollards in County Commons with solar LED luminaries
Capital Investment	GEO NEED Grant	City and County of Broomfield	Broomfield	Broomfield	$ 7,500.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	City of Fort Collins Municipal Utility			$ 72,000.00	Purchase of software to track resource usage and target efficiency program outreach
Capital Investment	GEO NEED Grant	Community Health Clinic	Dove Creek	Dolores	$ 37,425.00	Installation of a ground source heat pump
Capital Investment	GEO NEED Grant	Costilla County	San Luis	Costilla	$ 28,050.00	Equipment for solar thermal feedstock preheating system for biodiesel production
Capital Investment	GEO NEED Grant	Delta Montrose Electric Association	Montrose	Montrose	$ 60,000.00	Community Solar Array (20 kWh CSA) installation
Capital Investment	GEO NEED Grant	Denver Regional Council of Governments			$ 189,120.00	Funding for a web-based cost/benefit system for building owners considering solar PV systems.
Capital Investment	GEO NEED Grant	Durango Discovery Museum	Durango	La Plata	$ 248,000.00	Funding of equipment for a 10kW solar PV, Solar thermal, GeoExchange radiant floor,
Capital Investment	GEO NEED Grant	Eagles' Nest Learning Center	Black Hawk	Gilpin	$ 19,872.00	Installation of 5kW solar PV system, and other EE work in the Eagle's Nest Pre-School
Capital Investment	GEO NEED Grant	Etown	Boulder	Boulder	$ 295,000.00	Installation of 53 kW PV Array on roof, HVAC, and other RE/EE systems
Capital Investment	GEO NEED Grant	Garfield County Public Library Foundation, Inc.	Rifle	Garfield	$ 40,000.00	Installation of energy monitoring system in Rifle Public Library
Capital Investment	GEO NEED Grant	Good Samaritan Society-Simla	Simla	Elbert	$ 200,000.00	Installation of geothermal hot water, HVAC, and lighting retrofit.
Capital Investment	GEO NEED Grant	Grand County Business & Economic Development Assoc.	Granby	Grand	$ 91,397.00	Installation of high efficiency boilers and solar thermal in senior housing units
Capital Investment	GEO NEED Grant	Grand County Business & Economic Development Assoc.	Winter Park	Grand	$ 4,500.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	Gunnison County Electric Association, Inc.	Gunnison	Gunnison	$ 24,042.00	Construction of a wind turbine to provide electricity to Gunnison, Saguache, & Hinsdale counties
Capital Investment	GEO NEED Grant	Gunnison County Electric Association, Inc.	Gunnison	Gunnison	$ 7,674.78	Continuation of Doyleville Wind Project,#11-061
Capital Investment	GEO NEED Grant	La Plata Electric Association, Inc.	Durango	La Plata	$ 7,500.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	Main Street Steamboat Springs, Inc.	Steamboat Springs	Routt	$ 7,500.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	Mesa County School District 51	Grand Junction	Mesa	$ 103,152.00	Installation of Solatubes to reduce electricity use.
Capital Investment	GEO NEED Grant	New Community Coalition	Telluride	San Miguel	$ 7,500.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	Northeast Denver Housing Center, Inc.	Denver	Denver	$ 107,500.00	Install 20 solar PV systems in affordable housing totalling 54 kW.
Capital Investment	GEO NEED Grant	OptiMiser, LLC			$ 50,000.00	Development funds for software program to support home energy audits
Capital Investment	GEO NEED Grant	Painted Sky Resource Conservation & Development Council	Delta	Delta	$ 7,500.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	Penikin, Inc.	Englewood	Arapahoe	$ 30,000.00	Funding for the launch and operation of the Colorado Geothermal Heat Exchange Association
Capital Investment	GEO NEED Grant	Prairie Lane Ranch	Karval	Lincoln	$ 11,529.00	Installation of wind turbine
Capital Investment	GEO NEED Grant	Rio Blanco County	Meeker	Rio Blanco	$ 298,412.00	Multiple and varied improvements at Fairfield Senior Apartments
Capital Investment	GEO NEED Grant	Routt County	Steamboat Springs	Routt	$ 175,000.00	Install of several EE measures in county buildings
Capital Investment	GEO NEED Grant	South Central Council of Governments	Walsenburg	Huerfano	$ 7,500.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	Southwest Energy Efficiency Project (SWEEP)			$ 65,800.00	Development of a regional green building code for the Denver Metro area
Capital Investment	GEO NEED Grant	Sustainable Technology Institute	Idaho Springs	Clear Creek	$ 3,000.00	Provide outreach for Small Business Efficiency Program
Capital Investment	GEO NEED Grant	Town of Basalt	Basalt	Eagle	$ 119,025.00	Installation of a 40kW Hydropower facility
Capital Investment	GEO NEED Grant	Town of Telluride	Telluride	San Miguel	$ 150,000.00	100kW PV system at Telluride Wastewater Treatment Plant
Capital Investment	GEO NEED Grant	Town of Windsor	Windsor	Weld	$ 196,422.00	Installation of various RE and EE measures, including heat pump in Windsor Police Facility
Capital Investment	GEO NEED Grant	Visiting Nurse Association	Denver	Denver	$ 7,839.00	Funding for lighting retrofit
Capital Investment	Revolving Loan Program	Colorado Housing and Finance Authority			$ 17,587,419.00	Create revolving loan fund and loan loss reserve program
Capital Investment	Revolving Loan Program	Harcourt Brown, LLC			$ 39,935.00	Planning & consultation on the revolving loan fund
Commercial Buildings – Existing	BOCES Energy Manager Grant	Mountain Board of Cooperative Educational Services	Leadville	Lake	$ 141,385.00	Funding for an Energy Manager at ten school districts in Mountain BOCES
Commercial Buildings – Existing	BOCES Energy Manager Grant	San Luis Valley Board of Cooperative Educational Services	Alamosa	Alamosa	$ 104,375.00	Funding for an Energy Manager at fourteen school districts in San Luis Valley BOCES
Commercial Buildings – Existing	Colorado Energy Strategy Group Scholarships	BMC Consultants, LLC			$ 30,000.00	Scholarships for continuing education of public sector energy managers
Commercial Buildings – Existing	Community Recharge Colorado Innovation Grant	Alamosa Presbyterian Church	Alamosa	Alamosa	$ 10,038.00	Outreach & education through 7 churches in San Luis valley
Commercial Buildings – Existing	Community Recharge Colorado Innovation Grant	Colorado Springs SD #11	Colorado Springs	El Paso	$ 23,261.00	Provide training for Colorado Association of School District Energy Managers
Commercial Buildings – Existing	Community Recharge Colorado Innovation Grant	Colorado State University	Ft. Collins	Larimer	$ 40,169.00	Creation of EE & RE K-12 curriculum for use by 4H and CSU extension
Commercial Buildings – Existing	Community Recharge Colorado Innovation Grant	Denver County SD #1	Denver	Denver	$ 28,360.00	Funding for several DPS training and outreach programs
Commercial Buildings – Existing	Community Recharge Colorado Innovation Grant	Four Corners Office for Resource Efficiency	Durango	La Plata	$ 29,075.00	Create a mobile energy science center, part of the Durango Discovery Museum

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Commercial Buildings – Existing	Community Recharge Colorado Innovation Grant	Grand County Business & Economic Development Assoc.	Walden	Jackson	$ 1,200.00	Provide a course in Building Science and energy auditing in North Park High School.
Commercial Buildings – Existing	Database Management	Hostworks, Inc.			$ 1,349.35	Provide a shared web hosting environment for EPC/HPB programs
Commercial Buildings – Existing	Database Management	Wyant Data Systems, Inc.			$ 40,880.00	EPC/HBD Database upgrade, phase 2
Commercial Buildings – Existing	Database Management	Wyant Data Systems, Inc.			$ 108,900.00	Upgrade & Improvements for EPC/HBD database
Commercial Buildings – Existing	Energy Efficiency in Historic Buildings	Como Depot	Como	Park	$ 81,500.00	Install two wood biomass boilers and hydronic distribution system at Como Hotel
Commercial Buildings – Existing	Energy Efficiency in Historic Buildings	Engine House No. 5, LLC	Denver	Denver	$ 10,000.00	Install a chilled beam system for overhead distribution of heating and cooling
Commercial Buildings – Existing	Energy Efficiency in Historic Buildings	Pioneer Historical Society of Bent County	Las Animas	Bent	$ 23,996.00	Install insulation and inspect doors in Rawlings Heritage Center
Commercial Buildings – Existing	Energy Efficiency in Historic Buildings	Town of Crested Butte	Crested Butte	Gunnison	$ 31,130.00	Install energy efficiency measures in Crested Butte Town Hall and Old Rock Library
Commercial Buildings – Existing	Energy Performance in Commercial Buildings(EPC)	Nexant, Inc.			$ 803,673.00	Technical assistance to public agencies: Energy Performance Contracting
Commercial Buildings – Existing	Energy Performance in Commercial Buildings(EPC)	Trident Energy			$ 787,008.00	Technical assistance to public agencies: Energy Performance Contracting
Commercial Buildings – Existing	Greening Government	Nexant, Inc.			$ 59,348.85	Implementation of Energy CAP at all state agencies operating in owned facilities.
Commercial Buildings – Existing	LEED for Existing Buildings	Colorado State University	Ft. Collins	Larimer	$ 47,525.00	LEED feasibility study for CSU campus
Commercial Buildings – Existing	LEED for Existing Buildings	University of Northern Colorado	Greeley	Weld	$ 31,105.00	LEED feasibility study for NCU campus
Commercial Buildings – Existing	Main Street Efficiency Initiative	Clean Energy Economy for the Region (CLEER)	Carbondale	Garfield	$ 150,000.00	Start-up funding for a 3-county Main Street program
Commercial Buildings – Existing	Main Street Efficiency Initiative	Colfax Green Partnership	Denver	Denver	$ 150,000.00	A pilot project to bring EE services to 200 businesses along Colfax Ave,
Commercial Buildings – Existing	Main Street Efficiency Initiative	Energy CAP, Inc.			$ 19,000.00	Tool for Main Street participants to report data to GEO
Commercial Buildings – Existing	Main Street Efficiency Initiative	Platte River Power Authority	Ft. Collins	Larimer	$ 100,000.00	An EE program for small and medium businesses in northeastern Colorado
Commercial Buildings – Existing	Main Street Efficiency Initiative	Trident Energy	Longmont	Boulder	$ 81,000.00	MSEI program management
Commercial Buildings – Existing	Nonprofit Energy Efficiency Program	Energy Outreach Colorado	Denver	Denver	$ 250,000.00	Implement Energy Conservation measures in rural non-profits.
Commercial Buildings – Existing	Recharge Colorado	Colorado State University	Ft. Collins	Larimer	$ 4,540.00	Create a one-day EE program for elementary schools, to be delivered on-site
Commercial Buildings – Existing	GEO NEED Grant	City of Lamar	Lamar	Prowers	$ 7,500.00	ECM outreach & implementation
Commercial Buildings – Existing/ Capital Investment	GEO NEED Grant	High Country Conservation Center	Leadville	Lake	$ 22,500.00	Provide outreach for Small Business Efficiency Program
Commercial Buildings – High Performance Design (HPB)	Commercial Buildings	Town of Eads	Eads	Kiowa	$ 48,900.00	Funding to achieve LEED Gold at Crow Luther Events Center in Eads
Commercial Buildings – High Performance Design (HPB)	ENERGY STAR, LEED	University of Colorado Real Estate Foundation			$ 105,000.00	Valuation of high performance buildings
Commercial Buildings – High Performance Design (HPB)	High Performance Building Program	Ambient Energy, Inc.			$ 949,719.00	Education and advice for clients in the High Performance Commercial Building Program
Commercial Buildings – High Performance Design (HPB)	High Performance Building Program	Boulder Housing Partners	Boulder	Boulder	$ 25,000.00	Energy analysis and design assistance for the High Mar Redevelopment Project
Commercial Buildings – High Performance Design (HPB)	High Performance Building Program	Gunnison County	Gunnison	Gunnison	$ 50,000.00	Commissioning of new Detention Center and Public Works facility
Commercial Buildings – High Performance Design (HPB)	High Performance Building Program	Hutton Architecture Studio			$ 1,117,124.25	Education and advice for clients in the High Performance Commercial Building Program
Commercial Buildings – High Performance Design (HPB)	High Performance Building Program	Kiowa County	Eads	Kiowa	$ 33,570.00	Funding for energy renovation of historic Murdock building
Commercial Buildings – High Performance Design (HPB)	High Performance Building Program	Walking Mountains Science Center	Avon	Eagle	$ 50,000.00	Funding for multiple renewable energy components of campus buildings
Commercial Buildings – High Performance Design (HPB)	High Performance Design	Housing Authority of the City and County of Denver	Denver	Denver	$ 100,000.00	Installation of a ground source heat pump
Commercial Buildings – High Performance Design (HPB)	Sustainability Management Systems	Denver County SD #1	Denver	Denver	$ 42,000.00	Development of a Sustainability Management Plan for Denver Public Schools
Commercial Buildings – High Performance Design (HPB)	Sustainability Management Systems	Whitney Consulting	Colorado Springs	El Paso	$ 72,210.00	Assist school districts to develop Sustainability Management Plans
Commercial Buildings – High Performance Design (HPB)	Sustainability Management Systems	Whitney Consulting	Colorado Springs	El Paso	$ 30,710.00	Promote outreach and membership of both CSPMA and CASDEM
Greening Government	Big Fix Software	Governor's Office of Information Technology			$ 100,000.00	Purchase of workstation power management program through OIT
Greening Government	Energy & Water Conservation Improvements Grant	Colorado State University	Ft. Collins	Larimer	$ 46,870.00	Install 476 ultra low-flow showerheads in 3 residence halls
Greening Government	Energy & Water Conservation Improvements Grant	Colorado State University	Ft. Collins	Larimer	$ 37,390.00	Replace 75 inefficient refrigerators on the CSU campus
Greening Government	Energy & Water Conservation Improvements Grant	Department of Military & Veterans Affairs	Denver	Denver	$ 37,610.00	Funding for retrofits of interior lighting and control systems, at two separate locations
Greening Government	Energy & Water Conservation Improvements Grant	Regents of the University of Colorado, Boulder	Boulder	Boulder	$ 40,080.00	install aerators, flush meters, and dual-flush toilets on CU campus
Greening Government	Energy and Water Conservation Grant	Department of Human Services			$ 23,400.00	Replace 52 old and inefficient refrigerators in DHS facilities statewide.
Greening Government	Energy and Water Conservation Grant	Department of Personnel and Administration	Denver	Denver	$ 14,650.00	New controls for the Capitol Complex chilled water loop system
Greening Government	Greening Government	Energy CAP, Inc.			$ 100,000.00	Utility bill database and management for state government facilities
Greening Government	Greening Government	Metro Appliances & More	Joplin	Missouri	$ 45,820.00	Purchase of 116 energy efficient refrigerators for state agencies
Public Information	Community Marketing Grant	Black Star Communications dba Colours TV			$ 6,000.00	Planning and presentation of 2-hour event for 150 multicultural leaders
Public Information	Community Marketing Grant	Colorado Interfaith Power & Light	Denver	Denver	$ 18,750.00	EE/RE Outreach by Interfaith Power & Light
Public Information	Community Marketing Grant	Earth Force, Inc.	Denver	Denver	$ 15,000.00	Youth-led energy efficiency outreach programs using service learning
Public Information	Community Marketing Grant	Evergreen Alliance for Sustainability	Evergreen	Jefferson	$ 11,680.00	Year-long campaign to reduce energy use in Evergreen area.
Public Information	Community Marketing Grant	Five Points Business District	Denver	Denver	$ 10,000.00	Promote EE/RE in the Five Points community

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Public Information	Community Network Grant	City of Greeley	Greeley	Weld	$ 13,933.00	gREeNEWAL program promotion
Public Information	Community Network Grant	Urban League of Metro Denver, Inc.	Denver	Denver	$ 25,000.00	Outreach to low-income areas with affordable and accessible EE solutions
Public Information	Community Recharge Colorado Innovation Grant	Atmosphere Conservancy	Ft. Collins	Larimer	$ 50,000.00	Energy efficiency outreach initiative
Public Information	Community Recharge Colorado Innovation Grant	Fremont RE-2 SD 1150	Florence	Fremont	$ 20,000.00	Installation of a solar PV system on a house built by students
Public Information	Energy Smart Loan Program	Community Office for Resource Efficiency	Aspen	Pitkin	$ 9,968.00	Technical support and outreach for Energy Smart Loan Program
Public Information	Energy Smart Loan Program	Eagle Valley Alliance for Sustainability	Vail	Eagle	$ 9,987.50	Develop a marketing program for the ESLP in Eagle County
Public Information	Energy Smart Loan Program	Office for Resource Efficiency	Gunnison	Gunnison	$ 9,993.50	ENERGY SMART Loan Program outreach
Public Information	GEO NEED Grant	National Renewable Energy Laboratory			$5,000.00	Sponsorship of NREL's Industry Growth Forum
Public Information	Public Information	Bolder Staffing	Denver	Denver	$ 68,280.46	Temporary employee for Public Information Officer
Public Information	Public Information	Bolder Staffing	Denver	Denver	$ 29,323.00	Temporary employee for Public Information Officer
Public Information	Public Information	Colorado Renewable Energy Society (CRES)			$ 5,000.00	Sponsorship funding for four CRES events
Public Information	Public Information	Colorado Renewable Energy Society (CRES)			$ 11,000.00	Sponsorship of 23 CRES events
Public Information	Public Information	CORE Foundation			$ 10,000.00	Sponsorship funding for Cleantech Open
Public Information	Public Information	Denver Area Better Business Bureau			$ 5,500.00	Purchase of BBB information for Wyoming and N. Colorado
Public Information	Public Information	Denver Bike Sharing	Denver	Denver	$ 90,000.00	2-year sponsorship of two B-Cycle kiosks, plus 200 bike shrouds
Public Information	Public Information	Denver Metro BOMA	Denver	Denver	$5,000.00	Sponsorship of Watts to Water, promoting EE in commercial buildings in Denver
Public Information	Public Information	Statewide Internet Portal Authority			$ 8,125.00	Migrate GEO's website content from current site to Colorado Interactive CMS
Public Information	Public Information	Vladimir Jones			$ 2,500,000.00	Web-site and call center management, ongoing marketing and research functions
Public Information	Rebate Program	Press-One Customer Care, Inc.			$ 52,650.00	Rebate processing
Public Information	Recharge Colorado	Symbiotic Engineering, LLC			$ 980,000.00	Development of a stand-alone strategy for Recharge Colorado
Public Information	ReNew Our Schools	Center for Resource Conservation	Boulder	Boulder	$ 75,266.00	Renewable energy outreach & curricula for K-12 students
Public Information	Residential Energy Efficiency Working Group	Energy Efficiency Business Coalition	Denver	Denver	$ 25,000.00	Provide meeting administrative support
Public Information	Utilities	Navigant Consulting, Inc.			$ 46,962.00	Collect utility data and present in 2009 Colorado Utilities Data Report
Renewable Energy, Education & Outreach	ARRA/WIA fund transfer	Colorado Department of Labor & Employment			$ 200,000.00	Green energy employment and training
Renewable Energy, Education & Outreach	Colorado Energy Planning	R.W.Beck			$ 175,000.00	A cost/benefit study of distributed solar PV and small hydro from a utility perspective.
Renewable Energy, Education & Outreach	FERC/Small Hydropower Projects	Community Hydropower Consulting LLC			$ 25,000.00	Consulting services on the FERC/small hydropower project
Renewable Energy, Education & Outreach	Geothermal Working Group	Penikin, Inc.	Englewood	Arapahoe	$ 19,555.00	CO Geothermal Working Group Coordinator
Renewable Energy, Education & Outreach	Wind Working Group	Meridian Institute			$ 13,665.10	Legislative planning for "community-based" renewable energy projects,
Renewable Energy, Education & Outreach	Woody Biomass Program	CTA Architects Engineers			$ 11,132.00	Evaluation of boilers as candidates for biomass supplementation
Renewable Energy, Education & Outreach	Woody Biomass Program	Donald Foss Smith Jr.	Fairplay	Park	$ 10,500.00	Technical and general support for the Biomass Working Group
Renewable Energy, Program Consultants	Anemometer Loan Program	Colorado State University			$ 99,100.00	Management of the anemometer loan program
Renewable Energy, Program Consultants	CGS Geologist	Colorado Geological Survey			$ 324,995.00	Creation of a database of Colorado geothermal data, and other analysis and collection.
Renewable Energy, Program Consultants	Energy Smart Loan Program	Community Office for Resource Efficiency	Aspen	Pitkin	$ 25,027.00	Technical support and outreach for Energy Smart Loan Program
Renewable Energy, Program Consultants	FERC/Small Hydropower Projects	Community Hydropower Consulting LLC			$ 25,000.00	Consulting services on the FERC/small hydropower project
Renewable Energy, Program Consultants	Geothermal Professor	Colorado School of Mines	Golden	Jefferson	$ 150,000.00	Fund a professorship in geothermal engineering
Renewable Energy, Program Consultants	Public Utilities Commission	Keyes and Fox, LLP			$ 25,000.00	Legal counsel regarding matters before the PUC
Renewable Energy, Program Consultants	Renewable Energy Development Team	Sentech, Inc.			$ 1,174,605.00	Renewable Energy Development Team (REDT) Management
Renewable Energy, Rebates and Grants	Alternative Fuels	City of Grand Junction	Grand Junction	Mesa	$ 288,000.00	Equipment for a CNG Fueling Station
Renewable Energy, Rebates and Grants	Colorado Ground Source Heat Pump Rebate	Delta Montrose Electric Association	Delta	Delta	$ 295,000.00	Funding for DMEAs Ground Source Heat Pump Rebate Program
Renewable Energy, Rebates and Grants	Geothermal Power and Direct Use	City of Aspen	Aspen	Pitkin	$ 50,000.00	Drilling of a test well into the geothermal aquifer
Renewable Energy, Rebates and Grants	Geothermal Power and Direct Use	City of Ouray	Ouray	Ouray	$ 20,000.00	Installation of geothermal heating system in City Shop Building
Renewable Energy, Rebates and Grants	Geothermal Power and Direct Use	City of Salida	Poncha Springs	Chaffee	$ 49,500.00	Exploration and thermal gradient studies leading to commercial electricity production
Renewable Energy, Rebates and Grants	Geothermal Power and Direct Use	Town of Rico	Rico	Dolores	$ 25,000.00	Funding for a community outreach for a proposed geothermal development

Renewable Energy, Rebates and Grants	Global New Energy Summit	Global New Energy Summit			$ 10,000.00	Sponsorship of 2012 Global New Energy Summit
Renewable Energy, Rebates and Grants	Global New Energy Summit	Rocky Mountain Technology Alliance			$ 5,000.00	Sponsorship of 2012 Global New Energy Summit
Renewable Energy, Rebates and Grants	Rebate Program	Helgeson Enterprises, Inc.			$ 6,049,558.00	Rebate Program
Renewable Energy, Rebates and Grants	Solar for Non-Profit Organizations Grant	Arvada Community Food Bank, Inc.	Arvada	Adams	$ 43,800.00	Installation of a 40kW solar PV Array
Renewable Energy, Rebates and Grants	Solar for Non-Profit Organizations Grant	Grand Valley Catholic Outreach	Grand Junction	Mesa	$ 78,066.00	Installation of a 54kW PV Array
Renewable Energy, Rebates and Grants	Solar for Non-Profit Organizations Grant	Mi Casa Resource Center	Denver	Denver	$ 47,716.72	installation of a 39.6 kW solar PV Array
Renewable Energy, Rebates and Grants	Solar for Non-Profit Organizations Grant	Mile High Youth Corps	Denver	Denver	$ 10,507.00	Installation of a PV array
Renewable Energy, Rebates and Grants	Wind for Schools	Boulder Valley RE2 dba Boulder County SD #2	Nederland	Boulder	$ 10,000.00	Turbine for Nederland High School
Renewable Energy, Rebates and Grants	Wind for Schools	Colorado State University	Ft. Collins	Larimer	$ 180,000.00	Distribute SEP ARRA funds to K-12 schools
Renewable Energy, Rebates and Grants	Wind for Schools	Douglas County Educational Foundation	Castle Rock	Douglas	$ 10,000.00	Installation of a small wind turbine at Ponderosa High School
Renewable Energy, Rebates and Grants	Woody Biomass Education Grant	Colorado State University, Colorado State Forest Service	Durango	La Plata	$ 35,000.00	Conduct 5 biomass utilization workshops in 2011
Renewable Energy, Rebates and Grants	Woody Biomass Utilization Grant	Clean Energy Collective, LLC	Carbondale	Garfield	$ 15,000.00	Feasibility study of proposed biomass-to-energy facility in central Colorado
Renewable Energy, Rebates and Grants	Woody Biomass Utilization Grant	Park County	Fairplay	Park	$ 3,960.00	Feasibility study of a biomass heating system for 4 Park County buildings
Renewable Energy, Rebates and Grants	Woody Biomass Utilization Program	For the Forest	Aspen	Pitkin	$ 19,320.00	Study of woody biomass as a fuel source in the Roaring Fork Valley
Renewable Energy, Rebates and Grants	Woody Biomass Utilization Program	Uncompahgre/Com, Inc.	Delta	Delta	$ 20,000.00	Feasibility study for the Uncompahgre Plateau Biomass Project
Renewable Energy, Rebates and Grants/Residential/Commercial Buildings – Existing	Rebate Program	Helgeson Enterprises, Inc.			$ 900,000.00	Establish an online rebate platform and rebate support call center, and more
Renewable Energy, Rebates and Grants/Utilities	Public Utilities Commission	Keyes and Fox, LLP			$ 24,871.00	Legal counsel regarding matters before the PUC
Residential	Above Building Code	Clean Energy Economy for the Region (CLEER)	Carbondale	Garfield	$ 14,992.94	Educate local building officials about existing EE programs.
Residential	Above Building Code	Eagle Valley Alliance for Sustainability	Vail	Eagle	$ 14,952.00	Promotion of the National Green Building Standard in the Eagle Valley
Residential	Above Building Code	US Green Building Council Colorado Chapter	Denver	Denver	$ 8,250.00	Continuing education for LEED homebuilders
Residential	Above Building Code	US Green Building Council Colorado Chapter	Denver	Denver	$ 14,811.00	One-day workshop on Implementing the LEED for Homes Rating system.
Residential	CFL Buy Down	Arkansas River Power Authority	Lamar	Prowers	$ 23,850.00	CFL promotion & distribution at ARPA branches
Residential	CFL Buy Down	City of Delta	Delta	Delta	$ 23,000.00	Compact fluorescent light buy-down
Residential	CFL Buy Down	City of Fountain	Fountain	El Paso	$ 30,000.00	Fountain Utilities gave away 30,000 CFLs
Residential	Collaborative Retrofit Change Agent Pilot	Assoc. of Energy & Environmental Real Estate Professionals			$ 8,000.00	Funding for pilot project of Retrofit Change Agents
Residential	Colorado Codes Project	Department of Local Affairs			$ 950,000.00	Statewide promotion of 2009 Intl. Energy Conservation Code(IECC) standards
Residential	Energy Assessment	Electronic Educational Devices, Inc.			$ 9,992.43	Purchase of 76 current measurement devices for circulation through libraries statewide
Residential	Energy Efficiency and Expansion in Training	Chinook Energy	Haxtun	Phillips	$ 13,000.00	Funding to increase capacity to deliver energy audits.
Residential	Energy Efficiency and Expansion in Training	Colorado Housing, Inc.	Pagosa Springs	Archuleta	$ 28,950.00	Energy efficient upgrades to 13 homes
Residential	Energy Efficiency and Expansion in Training	Fritz 4 Architecture, LLC	Carbondale	Garfield	$ 12,000.00	Education in sustainable practice in residential building
Residential	Energy Efficiency and Expansion in Training	GB3 Energy Solutions, Inc.	Denver	Denver	$ 37,258.00	Funding to increase capacity to deliver energy audits.
Residential	Energy Efficiency and Expansion in Training	GB3 Energy Solutions, Inc.	Denver	Denver	$ 19,618.00	Increase field capacity for performing energy efficiency retrofits
Residential	Energy Efficiency and Expansion in Training	High Country Conservation Center	Frisco	Summit	$ 6,400.00	Funding to increase capacity to deliver energy audits.
Residential	Energy Efficiency and Expansion in Training	This Efficient House	Ft. Collins	Larimer	$ 26,690.00	Provide training and equipment for employees
Residential	Energy Efficiency and Expansion in Training	US Weatherizing, LLC	Denver	Denver	$ 5,500.00	One day session in Air Sealing Technical training for 100 technicians
Residential	Energy Efficiency and Expansion in Training	US Weatherizing, LLC	Denver	Denver	$ 5,000.00	One day session in Air Sealing Technical training for 100 technicians
Residential	ENERGY STAR	Building Knowledge, Inc.			$ 15,300.00	Six half-day training sessions for ENERGY STAR Real Estate Professionals
Residential	ENERGY STAR	Chaffee County	Salida	Chaffee	$ 20,800.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	City of Aspen	Aspen	Pitkin	$ 18,000.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	City of Colorado Springs, Colorado Springs Utilities	Colorado Springs	El Paso	$ 15,000.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	City of Fort Collins, Fort Collins Utilities	Ft. Collins	Larimer	$ 50,000.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	City of Steamboat Springs	Steamboat Springs	Routt	$ 15,764.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	Clean Energy Economy for the Region (CLEER)	Carbondale	Garfield	$ 11,500.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	Delta Montrose Electric Association	Delta	Delta	$ 7,000.00	ENERGY STAR New Homes Education

Residential	ENERGY STAR	Eagle Valley Alliance for Sustainability	Vail	Eagle	$ 11,059.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	Four Corners Office for Resource Efficiency	Durango	La Plata	$ 25,000.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	High Country Conservation Center	Frisco	Summit	$ 25,000.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	Housing Resources of Western Colorado	Grand Junction	Mesa	$ 25,000.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	New Community Coalition	Telluride	San Miguel	$ 22,320.00	ENERGY STAR New Homes Education
Residential	ENERGY STAR	Residential Science Resources, LLC			$ 54,000.00	Outreach and training for ENERGY STAR program
Residential	ENERGY STAR Energy Saving Mortgage	Bank of Colorado			$ 257,660.00	Funding to provide mortgage discount for purchasers of ENERGY STAR homes
Residential	ENERGY STAR Energy Saving Mortgage	Wells Fargo Home Mortgage			$ 200,000.00	Funding to provide mortgage discount for purchasers of ENERGY STAR homes
Residential	Green Jobs	Colorado Department of Labor & Employment			$ 200,000.00	Increase the number of residential energy efficiency trainers
Residential	Innovation Funding for Energy Efficiency	All American Energy, LLC	Denver	Denver	$ 19,359.00	EE/RE outreach and marketing to rural households through Energy Waistline program
Residential	Innovation Funding for Energy Efficiency	Earth's Flame, Inc.	Durango	La Plata	$ 25,000.00	Start-up funding for EE fireplace retrofit device
Residential	Innovation Funding for Energy Efficiency	Snugg Home, LLC	Boulder	Boulder	$ 25,000.00	Marketing funds for a web-based retrofit process using personal energy advisors
Residential	Innovation Funding for Energy Efficiency	SpiroFlo Holdings, Inc.	Englewood	Arapahoe	$ 13,300.00	Field test of Spiro-Flo device, which reduces water use
Residential	Innovation Funding for Energy Efficiency	Symbiotic Engineering, LLC	Boulder	Boulder	$ 13,275.00	Funding to further develop the Teach For Sustainability curriculum
Residential	Innovation Funding for Energy Efficiency	Trilogy Technologies, Inc.	Aspen	Pitkin	$ 15,050.00	Funding for the marketing of energy control technology for second homes
Residential	Insulate Colorado	Lightly Treading, Inc.			$ 4,500.00	Funding for five Insulate Colorado training seminars
Residential	Insulate Colorado	Lightly Treading, Inc.			$ 1,500.00	Funding for two Insulate Colorado training webinars
Residential	Multiple Listing Service Improvement & Training	Assoc. of Energy & Environmental Real Estate Professionals	Evergreen	Jefferson	$ 19,150.00	Multiple Listing Service Training
Residential	Multiple Listing Service Improvement & Training	Boulder Green Building Guild	Boulder	Boulder	$ 9,960.00	Multiple Listing Service Improvement
Residential	Multiple Listing Service Improvement & Training	Colorado Real Estate Network, Inc.	Montrose	Montrose	$ 4,020.00	Implementation of Green Features into regional MLS system
Residential	Multiple Listing Service Improvement & Training	Grand County Board of Realtors, Inc.	Granby	Grand	$ 2,700.00	Multiple Listing Service Training in Grand and Jackson counties
Residential	Multiple Listing Service Improvement & Training	US Green Building Council Colorado Chapter			$ 7,315.00	Funding for the production of a Colorado Green MLS informational video
Residential	Residential	Bolder Staffing	Denver	Denver	$ 54,355.00	Temporary employee for Residential & Rebate Program
Residential	Residential	Bolder Staffing	Denver	Denver	$ 60,000.00	Temporary employee for Residential & Rebate Program
Residential	Residential	Office for Resource Efficiency	Crested Butte	Gunnison	$ 1,025.00	Pilot project to offer free audits to 25 homes
Residential/ +	Measurement and Verification	Nexant, Inc.			$ 413,513.00	Develop Measurement & Verification plan for ARRA funding sources.
Transmission	STAR report	ION Consulting, LLC			$ 124,600.00	Consulting services on electric power generation and transmission, and related topics
Transmission	Utilities Program	E2MG Energy & Environmental Management Group, LLC			$ 24,500.00	Scenario analysis of Colorado generation portfolio in 2030 & 2050
Utilities	Colorado Climate Action Plan	JM Designs, Inc.			$ 4,272.00	Design and layout of Colorado Climate Action Plan report
Utilities	GEO NEED Grant	SPIRAE, Inc.	Ft. Collins	Larimer	$ 150,000.00	Purchase of software and hardware for training of power-system engineers.
Utilities	Public Utilities Commission	Keyes & Fox LP			$ 25,000.00	Legal counsel regarding matters before the PUC
Utilities	Smart Grid Task Force	Meridian Institute			$ 49,954.15	Consulting on Smart Grid Task Force report
Utilities	Smart Grid Task Force	Regents of the University of Colorado, Boulder			$ 15,000.00	Create a white paper on the development of Smart Grids in Colorado
Utilities	Utilities	Butterfly Pavilion & Insect Center	Westminster	Jefferson	$ 1,195.00	Meeting with rural electric co-ops and municipal utilities on the benefits of EE
Utilities	Utilities	Montreux Energy, LLC			$ 5,000.00	Sponsorship of The World Urban Infrastructure Roundtable 2010
Utilities	Utilities	Regents of the University of Colorado, Denver			$ 18,900.00	Funding for utility modeling exercise in support of DSM and RE efforts by the GEO
Utilities	Utilities Program	E2MG Energy & Environmental Management Group, LLC			$ 44,000.00	A cost/benefit study of alternative renewable resources to meet 30% RES requirements

KEY:
BOCES - Board of Cooperative Education Services
CNG - Compressed Natural Gas
DSM - Demand Side Management
ECM - Energy Conservation and Management
EE - Energy Efficiency
EPC - Energy Performance Contracting
FERC - Federal Energy Regulatory Commission
HPB - High Performance Building
HVAC - Heating, Ventilation & Air Conditioning
kW - Kilowatt
LEED - Leadership in Energy and Environmental Design
PV - Photovoltaic
RE - Renewable Energy
NEED Grant - New Energy Economic Development
CASDEM - Colorado Association of School District Energy Managers
CSPMA - Colorado School Plant Managers Association

For some contracts, the actual amount paid is less than the contracted amount

Appendix 2:
Market Titles, Budget and Projects

SEP-ARRA Funds as Administered

*To see a complete list of projects, refer to appendix #1.

Market Title	Grant Program		
Capital Investment		**$**	**21,453,314**
	Colorado Center for Renewable Energy Economic Development		
	New Energy Economy Development (NEED) Grants		
	Small Business Efficiency Program		
	Green Colorado Credit Reserve		
	Revolving Loan Program		
Commercial Buildings - Existing		**$**	**3,239,703**
	Energy Performance in Commercial Buildings(EPC)		
	Community Recharge Colorado Innovation Grant		
	Colorado Energy Strategy Group Scholarships		
	Energy Performance in Historic Buildings		
	Non-profit Energy Efficiency Program		
	Main Street Efficiency Imitative		
	BOCES Energy Manager Grant		
	LEED for Historic Buildings		
	Database Management		
Commercial Buildings - High Performance New Construction		**$**	**2,367,081**
	Sustainability Management Systems		
	High Performance Building Program		
	High Performance Building Design		
	Commercial Buildings		
Greening Government		**$**	**729,694**
	Energy & Water Conservation Improvements Grant		
	Greening Government		
	Big Fix Software		

Public Information	**$**	**4,483,610**
Community Recharge Colorado Innovation Grant		
Community Marketing Grant		
Energy Smart Loan Program		
Community Network Grant		
ReNew Our Schools		
Recharge Colorado		
Public Information		
Rebate Program		
Utilities		
Renewable Energy, Outreach & Education	**$**	**378,399**
FERC/Small Hydropower Project		
Geothermal Working Group		
Woody Biomass Program		
Wind for Schools		
Green Jobs		
Renewable Energy, Program Consultants	**$**	**1,710,541**
Renewable Energy Development Team		
FERC/Small Hydropower Project		
Public Utilities Commission		
Anemometer Loan Program		
Energy Smart Loan Program		
Geothermal Professorship		
Geologic Database		
Renewable Energy, Rebates & Grants	**$**	**5,541,288**
Colorado Ground Source Heat Pump Rebate		
Solar for Non-profit Organizations Grant		
Geothermal Power and Direct Use		
Industry event sponsorship		
Woody Biomass Program		
Alternative Fuels		
Wind for Schools		
Residential and Small Commercial Rebate Program		

Residential Programs	**$**	**5,823,663**
Multiple Listing Service Improvement & Training		
Energy Efficiency and Expansion in Training		
Collaborative Retrofit Change Agent Pilot		
Innovation Funding for Energy Efficiency		
Green Jobs - Energy Efficiency Trainers		
Energy Star Energy Saving Mortgage		
Measurement and Verification		
ENERGY STAR New Homes		
Colorado Codes Project		
Above Building Codes		
CFL Buy Downs		
Residential		
Transmission	**$**	**347,226**
Strategic Transmission and Renewables (STAR) report		
Utilities Program		
Utilities	**$**	**689,844**
Public Utilities Commission		
Smart Grid Task Force		
Utilities Program		
Administration	**$**	**2,457,637**
	$	49,222,000

Appendix 3: Market Title Case Studies

Market Title: Public Information

Recharge Colorado and Rebates

As part of its goal to provide all Coloradans with access to information, services, and capital, the GEO used SEP-ARRA dollars to fund the development and implementation of Recharge Colorado, a website designed to provide comprehensive consumer information about Colorado's energy-savings opportunities in a single source.

The website launched in 2010, offering people in every corner of the state access to simple and accurate information about energy efficiency and renewable energy measures, a list of service providers, and financial incentives to help pay for installations. The site also served as the online platform to apply for the GEO's SEP-ARRA-funded Rebate Program. To ensure participation, the GEO employed a marketing firm to implement a statewide branding campaign, reach out to contractors, and work with local Community Energy Coordinators and various organizations to promote the program.

The response was enthusiastic. In the first four months of existence the website registered more than 166,000 unique visitors, with over 12,000 people opening an energy action profile. The innovative and broadly inclusive Rebate Program captured the public interest and prompted widespread adoption of energy efficiency upgrades.

While SEP-ARRA funding was used to create and maintain the site during the three-year grant, the ultimate goal was to create a successful program that could be sustained after SEP-ARRA funding ended, ensuring that Coloradans would continue to have access to this unique resource. On October 1, 2011, Recharge Colorado was moved outside of state government to become an independent non-profit organization.

This separation allowed for continued collaboration with utilities and the development of new opportunities, such as the inclusion of water conservation information. Recharge Colorado continues to spur job creation, innovation, and economic development.

RECHARGE COLORADO

Rebate Breakdown by Region

Region	Furnace	Energy audit	Insulation and Air Sealing	Duct Sealing	Energy Monitor	ENERGY STAR New Homes	PV Residential	PV Commercial	Solar Thermal Residential	Solar Thermal Commercial	Wind Commercial
Denver	635	166	482	17	17	25	32	2	29	1	0
Front Range	1402	408	2679	61	39	249	132	23	88	7	3
Northeast	3	18	2	0	3	0	5	0	2	0	1
Northwest	27	106	30	6	4	0	63	29	32	1	0
South Central	73	162	32	6	2	28	45	6	32	0	0
Southeast	14	25	30	0	0	0	6	0	3	0	1
Southwest	2	96	12	1	0	4	46	19	20	1	0
Total	2156	981	3267	91	65	306	329	79	206	10	5

Market Title: Capital Investment

Revolving Loan Fund

Start-up technology companies frequently find it difficult to raise capital when they need it most. To remove that barrier to success, the GEO established the Revolving Loan Fund, a financial vehicle that bridges the gap between venture capital and commercial lending.

Boulder Electric Vehicle (BEV) designs and builds an all-electric truck platform. It can be built up to a delivery van, a 15 passenger shuttle bus, a flat bed and a service body. The vehicles produce no emissions, achieve an equivalent of 50 mpg, and can save as much as $5,000 a year in operating costs. In 2011 a prototype had been built and was performing well in field tests, and companies were ready to place orders. BEV, though, did not have the necessary production capacity, and a commercial loan was not available to a start-up such as this.

The GEO made a loan of $1.3 million to BEV with SEP-ARRA funding through the Revolving Loan Fund that provided the capital to open two new production lines and hire additional employees. Since then, BEV has received orders for twenty-nine trucks, with more orders promised, and has created 25 jobs.

The Revolving Loan Fund has made seven loans to date, with more pending, and through those loans created or preserved 158 jobs.

Market Title: Commercial Building - Existing

Main Street Efficiency Initiative (MSEI)

Small commercial buildings offer many opportunities for energy efficiency measures. However, small business owners often do not have the time or expertise to undertake thorough assessments of their properties and follow through with recommended improvements.

The GEO's MSEI program was created to provide small businesses throughout the state with the financial and technical assistance necessary to install energy efficiency upgrades in their facilities. To date, the program has reached over 30 communities and 363 businesses, and resulted in projected annual energy savings of 1,693,567 kWh, 54,178 therms, and $263,795 in reduced annual utility costs.

In northern Colorado, a SEP-ARRA-funded grant from the GEO was the impetus for the Platte River Power Authority (PRPA) to create the Efficiency Express program to reach small businesses in the communities of Ft. Collins, Loveland, and Estes Park. PRPA selected three HVAC contractors, each of which agreed to allocate considerable resources in staff training and on-site work. 54 facility owners were offered an HVAC tune-up, with the understanding that further efficiency steps might be taken as they were identified. To date 39 businesses have taken some action, with more expected to follow, a conversion rate of better than 78%.

The program required a 25% contribution from the participants, a levy intended not just to stretch program dollars but also to promote a greater level of commitment by the participants. The program return on investment has been very good – less than one year for funds invested by businesses, and less than two years for the funds invested by PPRA.

All goals for the program were achieved. PRPA had hoped to see energy savings of 3,071,700 BTUs, but actually achieved 7,639,200, an improvement of 150%. The annual cost savings goal was $58,500, and $68,400 was achieved, a 17% improvement.

Market Title: Commercial Building - High Performance

Walking Mountains Science Center

Many organizations, including schools and governments, would like to include energy efficient measures in their new buildings, but lack the time and/or money to bring in advisors with the necessary skills. To overcome that barrier, the GEO created the High Performance Building Program, funded by SEP-ARRA.

The Walking Mountains Science Center in Avon, Colorado, offers year-round curriculum-based programs in natural science education to the 6,000 students of Eagle County, and provides additional programming for upwards of 23,000 residents and visitors annually.

When the Center began planning a new $15 million campus they knew that the energy components of the new buildings could be an integral part of their teaching, but they recognized that to achieve that goal they would need help. A $50,000 SEP-ARRA-funded sub-grant from the GEO allowed Ambient Energy, a contractor in the GEO's High Performance Building program, to provide third-party technical assistance (primarily energy modeling and plan review) during the design process, enhancing both the energy efficiency and renewable energy components of the project.

Particular attention was paid to the building envelope, with good results: compared to the original project design, which was already above code, the high performance design will save approximately 500 million BTUs per year. Other design elements include solar thermal, solar PV that supplies 60% of electricity needs, a 3.5 ton ground source heat pump, green roofs, and exterior siding from beetle-killed trees. All of these elements contributed to the energy efficiency of the building, to the extent the Center has applied for LEED Platinum certification.

According to the staff of Walking Mountains, the sub-grant and the third-party consulting added legitimacy to the project and greatly aided fund-raising efforts in the private sector, contributing substantially to the project's ultimate success.

500 million BTU's saved per year

60% of electricity needs supplied by solar

Market Title: Greening Government

The Big Fix

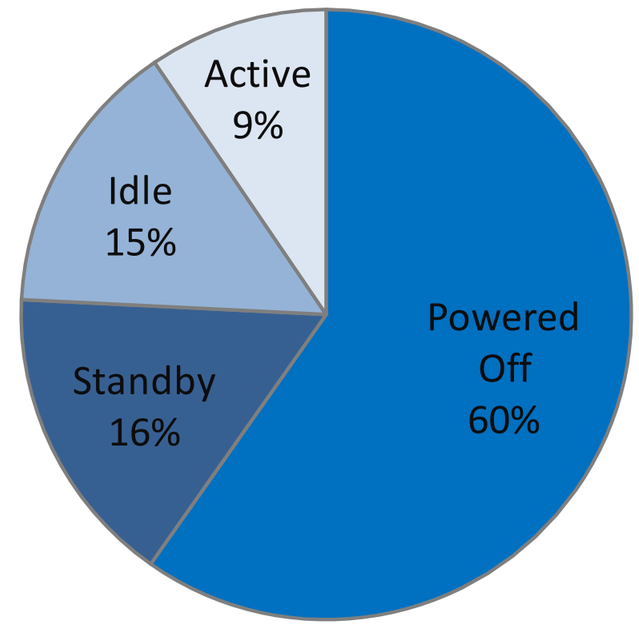
The Greening Government program works closely with state agencies to help them reduce their energy use by identifying energy efficient technologies that will help lower energy costs and lessen the environmental impact of state government operations.

Research conducted by the state's Office of Information Technology (OIT) and the Governor's Energy Office (GEO) found that many state desktop computers are left on full power even when they are not in use. With funding from the American Reinvestment and Recovery Act (ARRA), the state was able to purchase and install the Big Fix Power Management Software on 11,000 state-owned computers. This tool puts a desktop monitor into standby mode after fifteen minutes of inactivity, and will put an entire computer (CPU) into powered off mode after 45 minutes. The computer will awake when the mouse is moved, or when any key is tapped. Information will not be lost; the software automatically saves all user data before beginning any sleep or shut-down procedure. And users never notice it; it runs silently and invisibly.

This investment allowed the OIT to establish consistent settings for all desktops within each department and achieve state mandated energy savings goals. In addition, OIT is now able to more efficiently manage and update department software.

While purchase and installation of the Big Fix Management Software cost around $100,000, the state expects to save from $15-$45 a year for each of the 11,000 computers using it, with total savings in the hundreds of thousands of dollars, and a payback time of less than a year.

Average Day Breakdown Using Big Fix



Big Fix Breakdown	
Cost of Project	$100,000
Savings per Computer (annually)	$15 - $45
Number of Computers	11,000
Payback Time	Less Than 1 Year

*One day in the Colorado Energy Office only.

Market Title: Renewable Energy Outreach and Education

Green Jobs

Legislation, policy, and local natural resources have driven a steady increase in employment and economic development in green industries in Colorado. To ensure that Coloradans have the necessary skills to take advantage of growing opportunities in these industries, the Colorado Legislature established the Green Jobs Training Pilot Program.

Funded jointly with a SEP-ARRA grant from the Governor's Energy Office and funds from the Colorado Department of Labor and Employment (CDLE), the purpose of the program was to:

- Develop training strategies and curricula in the renewable energy and energy efficiency industries
- Implement or expand existing energy training programs
- Complement existing green job training initiatives experiencing a shortfall in resources

In northern Colorado, the Larimer County Workforce Center, in conjunction with the Larimer County Youth Corp, provided training for entry-level energy efficiency auditors, including internship placements. Eight individuals received training in energy efficiency, with two gaining BPI certification. As part of their training they conducted 364 energy audits of homes in northern Colorado.

The Colorado E3 Jobs Partners, a joint effort of Red Rocks Community College and Pueblo Community College, sought to remove barriers of access and cost for established contractors seeking to expand their business through training and certification in renewable energy and energy efficiency technologies. E3 awarded 29 scholarships to the program, 100% of goal, and 14 received BPI certificates.

The Denver Office of Economic Development used their GEO grant to enhance the job training and placement efforts of the Mile High Youth Corps (MHYC) by providing a variety of green industry certifications, in the hope that these certifications will make the graduates more competitive when entering the work force. To date 26 individuals have completed the training program, and all are still employed by MHYC.

Market Title: Renewable Energy Program Consultants

Small Hydropower

While there are many sites in Colorado suitable for small hydropower projects, development of those sites has been hampered by the complex and expensive process involved in getting the necessary permits from the Federal Energy Regulatory Commission (FERC). In 35 years, only 26 federal permits for hydropower projects had been issued in Colorado.

Recognizing this, the Governor's Energy Office (GEO) in 2009 began a process with FERC and other federal agencies involved to streamline the process and eliminate that barrier. Those efforts led to the August 2010 Memorandum of Understanding between FERC and the GEO, detailing the new permitting process. Agency reviews that once took up to three years could now be accomplished in a matter of months.

The first project to be presented under the new process was sent to FERC in the spring of 2011, and electricity was being produced by the fall. A small turbine installed on a ranch in northwest Colorado will produce 100,000 kWh, as much electricity as the ranch uses in an entire year. Over the next 35 years the facility will save $350,000 in utility costs and will provide a safe and secure energy source.

The GEO used SEP-ARRA funds to establish its Renewable Energy Development Team, which provided the technical assistance to this rancher and others. To date, the GEO has sent an additional six projects to FERC, and approval is expected for all. Once on line, they will contribute 1,219 kWs to the Colorado energy grid.

$350,000 savings over the life of one system

1,219 kWs contribution to energy grid

Market Title: Renewable Energy Rebates and Grants

Wind for Schools Program

The Wind for Schools (WFS) program was launched in 2005 as a collaborative effort between the Governor's Energy Office (GEO), Colorado State University (CSU), the U.S. Department of Energy (DOE) and the National Renewable Energy Laboratory (NREL). The initial pilot project was located in Walsenburg Colorado. Since then, the Colorado Wind Application Center at CSU and the GEO has selected nine K-12 schools across the State to participate in this program.

The Governor's Energy Office facilitated the WFS program statewide by providing technical, financial, and managerial support. SEP-ARRA funding provided additional support to help expand the WFS program.

The Program is designed to engage school teachers and students in wind energy education. A wind turbine located at the school provides a physical hands-on example of wind energy and its applications. Students and community members learn about operating costs and maintenance while initiating discussion of its benefits and potentials for the economy and environment. This experience provides students with a background in wind energy as they move into college and higher education. Each school operates a Southwest Windpower Skystream 1.8 kW machine.

To date, 11 states have implemented the Wind for Schools program resulting in over 95 systems installed throughout the country. The program has continued its successes at the University level aiming to develop a strong workforce for the future.

Market Title: Residential Energy Efficiency

Energy Efficiency at Time of Sale

Homeowners have long recognized the benefits of energy efficiency and renewable energy features. Energy retrofits create comfortable homes with lower utility bills. When selling a home, though, it is hard to capitalize on these improvements if potential buyers are unaware of them.

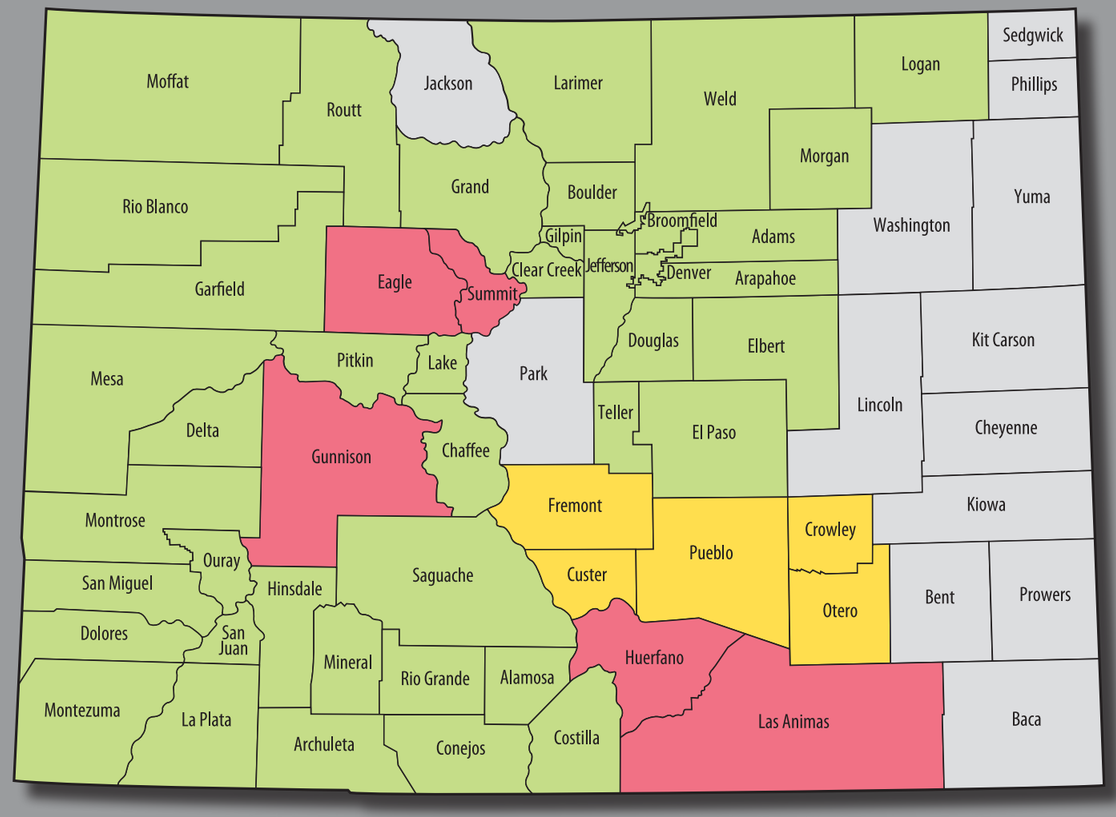
American Reinvestment and Recovery Act (ARRA) funding provided an opportunity to remove barriers that prevented the increase in information to both buyer and sellers. The Governor's Energy Office (GEO) formed a Residential Retrofit Working Group from which evolved the Multiple Listing Service (MLS) Grants.

The MLS is a broad database of real property listings as submitted by real estate brokers. This on-line catalog of properties for sale and recently sold contains detailed descriptions of a property's features. Until now, energy efficiency and renewable energy features were not included in the MLS listings.

Using ARRA funds, a total of five grants were awarded: three for training and two to enhance MLS databases. The GEO contracted with Metrolist Denver – the largest Colorado MLS, covering 40% of the state, to create "green fields" in their database.

On March 7 2012, Metrolist unveiled their enhanced MLS database. Realtors® can voluntarily enter energy efficiency and renewable energy upgrades as well as search for homes using the new fields. Currently, 90% of Colorado homes are in communities covered by a green MLS.

The green fields will not only help to inform buyers, sellers, and their brokers, they will also allow real estate appraisers to begin to analyze the market value of energy efficiency and renewable energy.



The above map represents counties participating in Green Fields (colored in green). Counties colored in pink are pending.

90 %
of Colorado homes are in communites covered by a green MLS

50 %
increase in number of homes covered

Market Title: Transmission

The Strategic Transmission and Renewables (STAR) Report

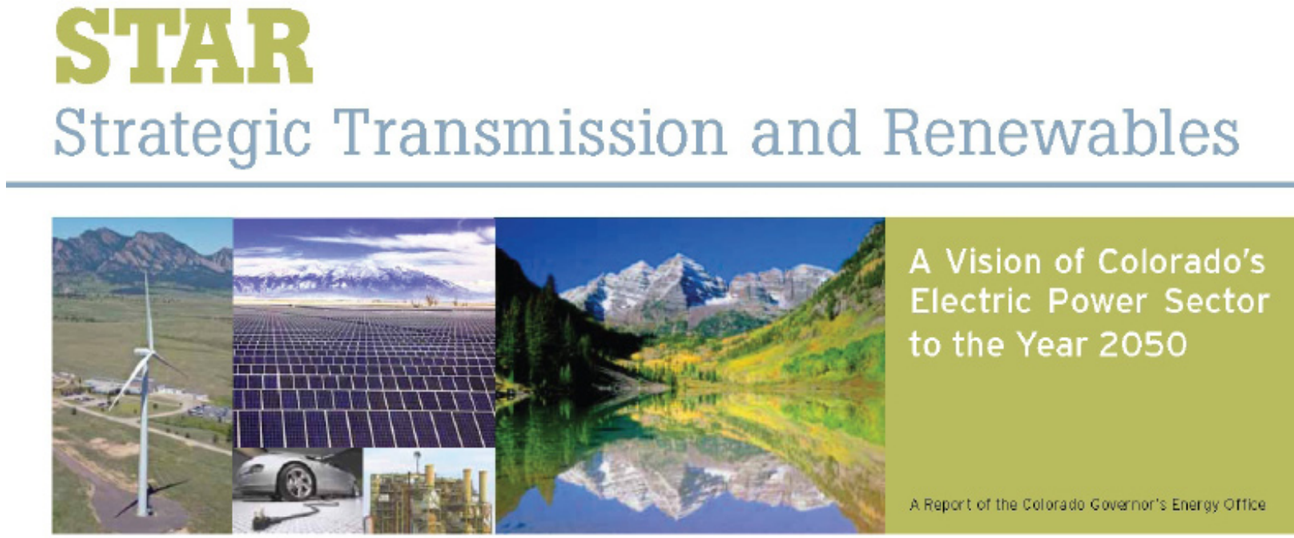
Developments in technology, the economy, and population growth present Colorado's electricity sector with a multitude of challenges. As part of its mission, the GEO used SEP-ARRA funds to commission a report that would analyze those challenges and make recommendations to solve them.

The Strategic Transmission and Renewables (STAR) Report was delivered in December 2010, offering findings as to how Colorado could create a productive, reliable electric power sector that is economically and environmentally sustainable. The project included a 38-page modeling of Colorado's electricity sector out to the year 2050, modeling that assumed an 80% growth in the state's population by that year.

The modeling provided data that supported five key recommendations for Colorado's strategic electric power sector: greater emphasis on energy efficiency and moderation of load growth; more utility-scale generation from renewable sources; less coal-fired generation; more natural gas-fired generation; and development of new high-voltage transmission infrastructure to deliver the new power to market.

While those five may offer the biggest immediate impact, the STAR report addressed no fewer than eleven additional areas of concern, including legislative actions, the role of balancing authorities, the feasibility of exporting Colorado's renewable energy, and the potential for independent transmission companies.

The STAR report provided the GEO with a comprehensive overview of Colorado's electric power sector, and allowed the office to craft programs and initiatives that would promote a cleaner, more efficient, and more balanced energy portfolio that will benefit generations of Coloradans to come.



The STAR report contains information and recommendations to address a multitude of challenges facing Colorado's electricity sector. The report updates previous work produced by the Governor's Office and Governor's Energy Office, offering analysis of current issues and recommendations for actions to meet the long-term interest of Colorado citizens.

Market Title: Utilities

Spirae

Electric utilities and transmission companies are facing a shortage of workers with the appropriate skills required to manage the complexities of their industry, and are often ill-equipped to provide training because it is an expensive and time-consuming endeavor.

To address this growing need, Spirae, Inc. of Ft. Collins, CO, created the Center for Smart Grid Advancement to provide structured, professional training for power system technicians and engineers. In collaboration with Colorado State University, Front Range Community College, and other partners, Spirae has built one of the largest power system simulation laboratories in the world. The InteGrid Lab simulates electrical distribution systems with significant quantities of renewable and distributed energy using real generation, distribution, controls, and metering equipment.

Spirae used an SEP-ARRA grant of $150,000 from the Governor's Energy Office (GEO) as leverage to obtain an additional $1.17 million in funding for the purchase of much of this equipment.

Students are able to work with multiple power system configurations, including end-to-end (from distribution to end-user) simulation, and systematically study anomalies using technology found only in the most advanced smart grid networks. Their courses cover not just the fundamentals of power grid operation, but also the growing fields of cyber security and the integration of distributed energy from renewable sources.

The GEO grant has promoted both infrastructure development and workforce training in the energy sector, and allows the technicians and engineers that will study there to gain the high-level skills required for employment in the energy sector in the future.

$150,000 leveraged to obtain

$ 1.17 million

Appendix 4: Press Releases

March 6, 2009 - New energy projects to play big role in recovery - The Governor's Energy Office said today it is establishing a competitive bid process to fund shovel-ready new energy economy projects with American Recovery and Reinvestment Act funds.

May 13, 2009 - Gov. Ritter announces plan for recovery act investments in Colorado's new energy economy

June 12, 2009 - Colorado wood-to-energy projects awarded $1 million from recovery act

July 20, 2009 - Colorado secures $20m in recovery funds for new energy work

July 29, 2009 - Governor's Energy Office kicks off High Performance Building Program

September 30, 2009 - Gov. Ritter, Secretary Chu announce recovery act dollars approved for Colorado energy projects

November 30, 2009 - Governor's Energy Office offers Coloradoans the opportunity to invest in energy efficiency with innovative new state-wide program

December 11, 2009 - Gov. Ritter announces $1.5m in new energy economic grants

January 19, 2010 - Coloradans can save money, build jobs with upcoming recovery act new energy grants

May 12, 2010 - GEO $800k in recovery act funded new energy grants

June 24, 2010 – GEO awards 19 community marketing grants

August 25, 2010 - Gov. Ritter announces acceleration of small hydro projects in Colorado

August 26, 2010 - Gov. Ritter announces $2.2m in new energy economic grants

September 9, 2010 - GEO leads new partnership to add energy and green features to real estate listings

September 14, 2011 - GEO's Renewable Energy Development Team Leads First Project Through Streamlined FERC Review

October 3, 2011 - Governor's Energy Office Unveils New Website: www.colorado.gov/energy

March 7, 2012 - Metrolist Launches New Green Fields, GEO Sponsors Statewide Initiative

April 12, 2012 - Roaring Fork Transit Authority Moves to CNG

**Press Releases issued by GEO only.*

Appendix 5: Contract Vendors and Sub Recipients

Appendix 5 | SEP-ARRA Vendors and Sub-recipients

Vendor or Sub-recipient	City
Alamosa Presbyterian Church	Alamosa
All American Energy, LLC	Denver
Ambient Energy, Inc.	Denver
Arkansas River Power Authority	Lamar
Arvada Community Food Bank, Inc.	Arvada
Assoc. of Energy & Environmental Real Estate Professionals	Evergreen
Astralux Environmental Solutions, LLC	Alamosa
Atmosphere Conservancy	Ft. Collins
Aurora Community Mental Health	Aurora
Aurora Community Mental Health	Aurora
Bank of Colorado	Denver
Big Agnes, Inc.	Steamboat Springs
Black Star Communications dba Colours TV	Denver
BMC Consultants, LLC	Parker
Bolder Staffing	Denver
Boulder Green Building Guild	Boulder
Boulder Housing Partners	Boulder
Boulder Valley RE2 dba Boulder County SD #2	Nederland
Buena Vista SD R31	Buena Vista
Building Knowledge, Inc.	Minneapolis, MN
Butterfly Pavilion & Insect Center	Westminster
Calhan Public School District R-J T-1	Calhan
Center for Resource Conservation	Boulder
Chaffee County	Salida
Chinook Energy	Haxtun
City and County of Broomfield	Broomfield
City of Aspen	Aspen
City of Colorado Springs, Colorado Springs Utilities	Colorado Springs
City of Delta	Delta
City of Fort Collins	Ft. Collins
City of Fort Collins, Fort Collins Utilities	Ft. Collins
City of Fountain	Fountain
City of Grand Junction	Grand Junction
City of Greeley	Greeley
City of Lamar	Lamar
City of Ouray	Ouray
City of Salida	Poncha Springs
City of Steamboat Springs	Steamboat Springs
Clean Energy Collective, LLC	Carbondale
Clean Energy Economy for the Region (CLEER)	Carbondale
Colfax Green Partnership	Denver
Colorado Department of Labor & Employment	Denver

Colorado Geological Survey	Denver
Colorado Housing and Finance Authority	Denver
Colorado Housing, Inc.	Pagosa Springs
Colorado Interfaith Power & Light	Denver
Colorado Real Estate Network, Inc.	Montrose
Colorado Renewable Energy Society (CRES)	Denver
Colorado School of Mines	Golden
Colorado Springs SD #11	Colorado Springs
Colorado State University	Ft. Collins
Colorado State University, Colorado State Forest Service	Durango
Community Health Clinic	Dove Creek
Community Hydropower Consulting LLC	Ft. Collins
Community Office for Resource Efficiency	Aspen
Como Depot	Como
CORE Foundation	Denver
Costilla County	San Luis
CTA Architects Engineers	Denver
Delta Montrose Electric Association	Delta
Denver Area Better Business Bureau	Denver
Denver Bike Sharing	Denver
Denver County SD #1	Denver
Denver Metro BOMA	Denver
Denver Regional Council of Governments	Denver
Department of Human Services	Denver
Department of Local Affairs	Denver
Department of Military & Veterans Affairs	Denver
Department of Personnel and Administration	Denver
Donald Foss Smith Jr.	Fairplay
Douglas County Educational Foundation	Castle Rock
Durango Discovery Museum	Durango
E2MG Energy & Environmental Management Group, LLC	Centennial
Eagle Valley Alliance for Sustainability	Vail
Eagles' Nest Learning Center	Black Hawk
Earth Force, Inc.	Denver
Earth's Flame, Inc.	Durango
Electronic Educational Devices, Inc.	Denver
Energy CAP, Inc.	State College, PA
Energy Efficiency Business Coalition	Denver
Energy Outreach Colorado	Denver
Engine House No. 5, LLC	Denver
Etown	Boulder
Evergreen Alliance for Sustainability	Evergreen
Five Points Business District	Denver
For the Forest	Aspen
Four Corners Office for Resource Efficiency	Durango
Fremont RE-2 SD 1150	Florence
Fritz 4 Architecture, LLC	Carbondale

Garfield County Public Library Foundation, Inc.	Rifle
GB3 Energy Solutions, Inc.	Denver
Global New Energy Summit	Colorado Springs
Good Samaritan Society-Simla	Simla
Governor's Office of Information Technology	Denver
Grand County Board of Realtors, Inc.	Granby
Grand County Business & Economic Development Assoc.	Granby
Grand County Business & Economic Development Assoc.	Winter Park
Grand County Business & Economic Development Assoc.	Walden
Grand Valley Catholic Outreach	Grand Junction
Gunnison County	Gunnison
Gunnison County Electric Association, Inc.	Gunnison
Harcourt Brown, LLC	Denver
Helgeson Enterprises, Inc.	Minneapolis, MN
High Country Conservation Center	Leadville
High Country Conservation Center	Frisco
Hostworks, Inc.	Denver
Housing Authority of the City and County of Denver	Denver
Housing Resources of Western Colorado	Grand Junction
Hutton Architecture Studio	Denver
ION Consulting, LLC	Denver
JM Designs, Inc.	San Clemente, CA
Keyes and Fox, LLP	Denver
Kiowa County	Eads
La Plata Electric Association, Inc.	Durango
Lightly Treading, Inc.	Denver
Main Street Steamboat Springs, Inc.	Steamboat Springs
Meridian Institute	Dillon
Mesa County School District 51	Grand Junction
Metro Appliances & More	Joplin
Mi Casa Resource Center	Denver
Mile High Youth Corps	Denver
Montreux Energy, LLC	Denver
Mountain Board of Cooperative Educational Services	Leadville
National Renewable Energy Laboratory	Golden
Navigant Consulting, Inc.	Denver
New Community Coalition	Telluride
Nexant, Inc.	Boulder
Northeast Denver Housing Center, Inc.	Denver
Office for Resource Efficiency	Gunnison
Office for Resource Efficiency	Crested Butte
OptiMiser, LLC	Denver
Painted Sky Resource Conservation & Development Council	Delta
Park County	Fairplay
Penikin, Inc.	Englewood
Pioneer Historical Society of Bent County	Las Animas
Platte River Power Authority	Ft. Collins

Prairie Lane Ranch	Karval
Press-One Customer Care, Inc.	Grand Junction
R.W.Beck	Denver
Regents of the University of Colorado, Boulder	Boulder
Regents of the University of Colorado, Denver	Denver
Residential Science Resources, LLC	Eagen, MN
Rio Blanco County	Meeker
Rocky Mountain Technology Alliance	Colorado Springs
Routt County	Steamboat Springs
San Luis Valley Board of Cooperative Educational Services	Alamosa
Sentech, Inc.	Golden
Snugg Home, LLC	Boulder
South Central Council of Governments	Walsenburg
Southwest Energy Efficiency Project (SWEEP)	Boulder
Spirae, Inc.	Ft. Collins
SpiroFlo Holdings, Inc.	Englewood
Statewide Internet Portal Authority	Denver
Sustainable Technology Institute	Idaho Springs
Symbiotic Engineering, LLC	Boulder
This Efficient House	Ft. Collins
Town of Basalt	Basalt
Town of Crested Butte	Crested Butte
Town of Eads	Eads
Town of Rico	Rico
Town of Telluride	Telluride
Town of Windsor	Windsor
Trident Energy / Canfield	Longmont
Trilogy Technologies, Inc.	Aspen
Uncompahgre/Com, Inc.	Delta
University of Colorado Real Estate Foundation	Boulder
University of Northern Colorado	Greeley
Urban League of Metro Denver, Inc.	Denver
US Green Building Council Colorado Chapter	Denver
US Weatherizing, LLC	Denver
Visiting Nurse Association	Denver
Vladimir Jones	Denver
Walking Mountains Science Center	Avon
Wells Fargo Home Mortgage	Denver
Whitney Consulting	Colorado Springs
Wyant Data Systems, Inc.	Louisville