A man wearing safety glasses and a hard hat is looking towards a vast solar farm. The solar panels are arranged in neat rows across a field, stretching towards the horizon under a cloudy sky. The man's face is in the foreground on the left, partially visible in profile.

Colorado Governor's Energy Office Annual Report Fiscal Year 2009–10



Governor's
Energy Office



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The Governor's Energy Office (rechargecolorado.com) was created by an Executive Order on April 16, 2007. GEO's mission is to lead Colorado to a New Energy Economy by advancing energy efficiency and renewable, clean energy resources. GEO works with communities, utilities, private and public organizations, and individuals to promote renewable energy such as wind, solar, hydroelectric and geothermal, and energy efficiency technologies in commercial and residential buildings.

On the cover: Mike Stewart looks over an array of solar panels at the Greater Sandhill Solar Project being constructed by SunPower Corporation outside of Alamosa.



Greetings,

I am proud to present the final annual report for the Governor's Energy Office, covering the activities of the office from July 2009–June 2010. The energy office was redesigned and re-missioned in 2007 to help achieve my vision of a New Energy Economy.

Midway through the fiscal year, the U.S. Department of Energy approved our plan for the greatest single investment in energy efficiency and renewable energy in our nation's history: the American Recovery and Reinvestment Act.

Our low income weatherization program received \$80 million, in addition to its existing appropriation from the federal government. Over the three-year period of the Act, the Weatherization Program will insulate the homes of nearly 25,000 Coloradans. In addition to the 450 direct jobs this sustains, the associated energy savings will put money in the pockets of those families living at the margins. An average of over \$400 is saved in utility bills for each of these families every year. That is \$10 million dollars saved every year that goes right back into the Colorado economy and helps the recipients meet their family's most critical needs.

In 2009, Colorado submitted to the DOE one of the most comprehensive plans to advance energy efficiency and renewable energy in the country. This is largely due to the leadership of the Governor's Energy Office and its vision for the state.

During my campaign, we talked about Colorado's opportunity to lead the world with a New Energy Economy. As Governor, my administration has turned that vision into a reality. The three-year head start we had on the Recovery Act in growing a New Energy Economy, and the nearly sixty bills signed into law, created an ecosystem of growth for the industry and a strong foundation for the investment that would follow.

When the Recovery Act passed, the dedicated staff of my energy office got together and brainstormed on how we could best advance energy efficiency and renewable energy in the state. We knew that people wanted to improve the efficiency of their homes and enjoy the benefits of renewable energy, but they frequently were frustrated by the lack of information and red tape. It was difficult to find installers and they weren't sure what to ask for.

We decided our Colorado Recovery Act plan would be built upon a three-legged stool of solutions to the three primary barriers people encounter when they want to participate in the New Energy Economy: 1) Access to Information; 2) Access to Capital and; 3) Access to Services. If we could make this easy for people, and create an effective mechanism for rebates and incentives statewide, we could break down those barriers and move from intention to action. This was the primary focus of our investment.

In this annual report, you will see how we took that principal, together with our

New Energy Economy vision, and made them the foundation of our program offerings and Recovery Act investments.

The credit for the success of these initiatives goes to the dedication and commitment of the Governor's Energy Office. Day after day, the GEO's staff applies its creativity, innovation, knowledge and experience toward one intention: making Colorado a better place.

It has been an honor and a privilege to work in their company. All of Colorado has benefited from their effort and the programs outlined in the pages of this report.

While 2009–10 marked the first large investment in the statewide New Energy Economy vision, the work of the office has really just begun. The coming years will bring more innovation, more programs, more opportunities and more successes for individuals and businesses around our state.

The entrepreneurial spirit of western independence we enjoy in Colorado will serve the state well as we offer the country a pathway to meet the energy needs of the future while preserving the unique beauty and natural environment that has made our state such a special place for generations of Coloradans.

Sincerely,

A handwritten signature in red ink that reads "Bill Ritter Jr." The signature is written in a cursive, slightly slanted style.

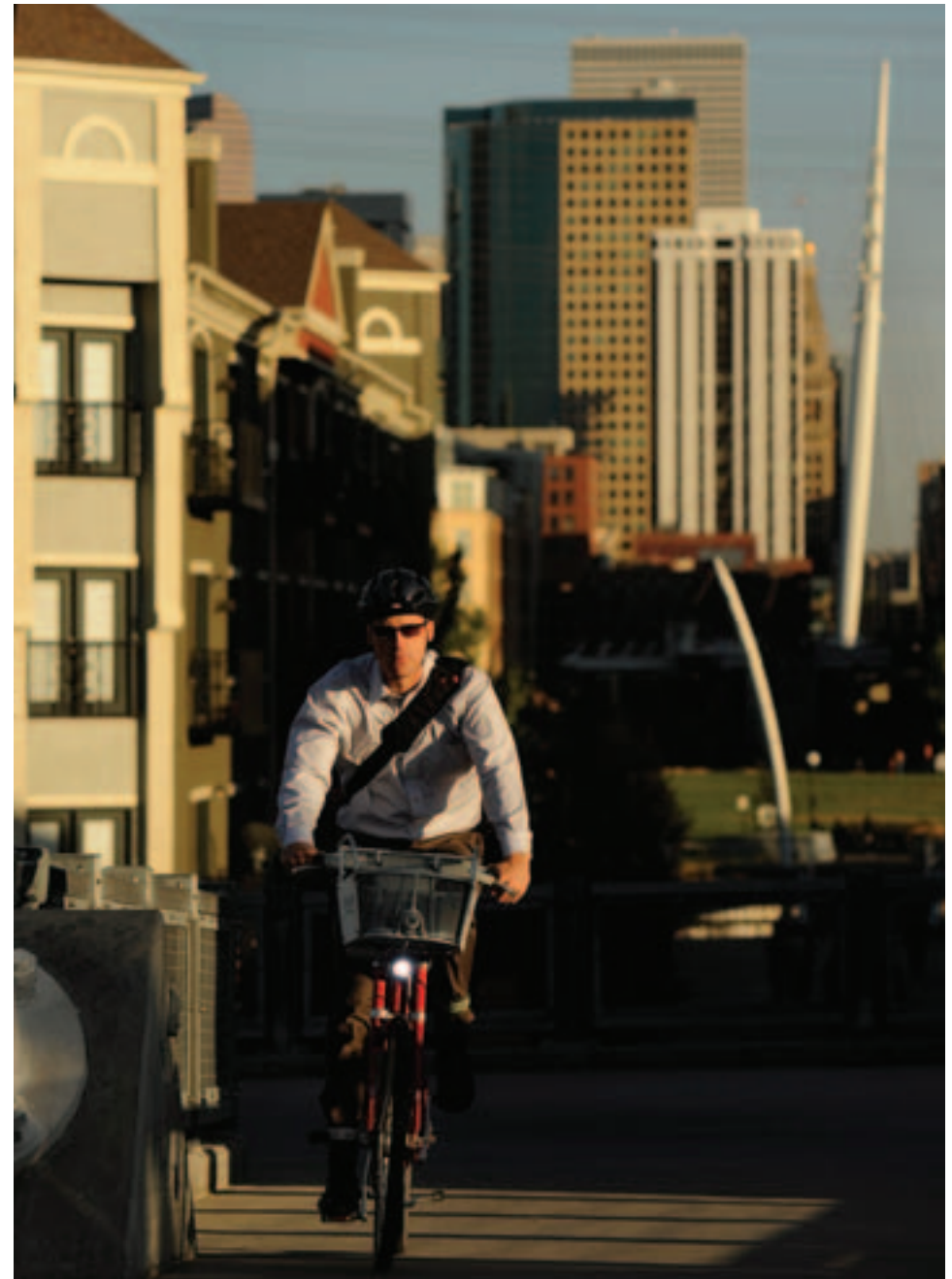
Bill Ritter Jr.
Governor

A 1.9-kW wind turbine provides a background to football practice at Wellington Middle School in Wellington, Colorado. The GEO's partnership in the Wind for Schools program helped provide funding for the turbine.



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A commuter takes advantage of the Denver Bike Sharing program as he rides over a bridge spanning I-25 in downtown Denver.



Workers put a solar- and wind-powered streetlight in place in Golden, Colorado.

Strengthening Colorado's New Energy Economy

Introduction

Under the leadership of Governor Bill Ritter Jr., Colorado has become a national leader in creating a New Energy Economy. Colorado's push to develop markets for new energy has made the state a magnet for clean energy companies, wind, solar and biomass plants, new energy workers and clean-tech venture capital. The state has set the pace in energy efficiency as well, with policy and private sector innovations that are leading businesses, industries and homeowners to significantly reduce their energy costs.

The Governor's Energy Office (GEO) has played an important role in these achievements since Governor Ritter took office in January of 2007. The GEO has strengthened the foundation for new energy with forward-thinking programs and partnerships that have generated widespread adoption and deployment of renewable energy and energy efficiency in communities, businesses, non-profits and utilities across Colorado.

Fiscal year 2010 was a capstone year for the GEO under Governor Ritter. The agency played a critical role in historic legislation that will dramatically increase

clean electricity generation. It continued efforts to reduce consumption by promoting greater energy efficiency in Colorado. It directed millions of American Recovery and Reinvestment Act dollars to Coloradans through programs that created jobs in the renewable energy and energy efficiency sectors. It doubled weatherization services to help thousands of low-income Colorado families save money and it launched a popular new website—rechargecolorado.com—and rebate program to help consumers more easily adopt efficiency and green energy measures. And it led new efforts to create financing programs that will facilitate the adoption of clean energy and energy-saving upgrades.

In four fast-paced years, Governor Ritter and the GEO have spurred new jobs, saved energy, cut pollution and greenhouse gases and reduced Colorado's reliance on imported energy. Our New Energy Economy is on solid footing to continue growing, prospering and leading the country on a clean power transformation.

Highlights of the GEO's 2010 fiscal year

- Began directing \$150 million in American Recovery and Reinvestment Act dollars to a rich variety of rebates, grants and other programs to sustain and create jobs and build the New Energy Economy marketplace.
- Played a key role in constructing legislation that will increase the share of renewable energy from the state's investor-owned utilities to 30 percent by 2020.
- Led 11 partners in weatherizing more than 7,400 homes and apartments belonging to low-income Coloradans statewide, cutting energy costs for those who most need the savings.
- Assisted in developing legislation that will bring clean energy to state parks, and help residents join "solar gardens" so they can benefit from solar energy even if they rent or don't have good solar exposure on their home.
- Recognized by EPA as an "ENERGY STAR Partner of the Year" for the second year in a row for work to increase the market share of energy-efficient ENERGY STAR New Homes statewide.
- Launched "Recharge Colorado," a comprehensive website and outreach campaign to make it easier for Coloradans to adopt energy efficiency and renewable energy.
- Developed and launched an \$18 million rebate program to create jobs, boost the economy and help Coloradans save money on energy-saving appliances, home insulation and renewable energy installations.
- Teamed with Eagle, Pitkin and Gunnison counties to win a \$5 million Department of Energy grant designed to jumpstart residential investment in energy efficiency.
- Published the Renewable Energy Development Infrastructure report, exploring the expansion of transmission and change in the state's electricity resource mix needed for Colorado to reach its carbon reduction goals.
- Collaborated on passage of legislation making it easier for communities statewide to adopt energy efficiency and renewable energy through financing repaid through property taxes.
- Worked with lawmakers to create the Smart Grid Task Force, which will convene experts to consider the best path forward in the management and development of a smart energy grid in Colorado.

- Added new weatherization providers in three regions as well as a statewide partner to focus on energy efficiency in multifamily buildings. These additions mean GEO is partnering with 11 agencies in Colorado to bring these services to low-income families who need it most.
 - Created an Executive Order signed by Governor Ritter on the 40th Anniversary of Earth Day that recognized and strengthened the greening government efforts made by state agencies. The order added greenhouse gas emission and landfill diversion goals to the existing goals for reducing consumption of energy, water, paper and petroleum.
 - Collaborated with Boulder, Denver and Garfield County to apply for and win a \$25 million “retrofit ramp-up” grant from DOE to increase energy efficiency in homes and commercial buildings.
 - Worked with the Federal Energy Regulatory Commission toward streamlining the permit process for small hydroelectric projects, opening the door for more projects by reducing hurdles for developers while maintaining high environmental standards.
 - Provided technical assistance to over 40 new public building projects to help ensure new schools and public facilities will be built to operate more efficiently, save taxpayer dollars, and be better places to work and learn.
 - Funded a full-time position at the Colorado Geological Survey for a geologist to improve mapping of geothermal hotspots with the potential for future clean energy development.
 - Coordinated the deployment of 18 community energy coordinators to lead energy efficiency and renewable energy efforts in rural and mountainous regions statewide.
 - Advised on legislation to reduce various barriers to geothermal, small hydroelectric and biomass projects.
 - Partnered with 16 new public agencies—states, cities, counties, school districts and higher education—to save taxpayer dollars by cutting energy costs and installing renewable energy.
 - Obtained a nearly \$1 million Department of Energy grant to expand and improve weatherization training through partnerships with community colleges and weatherization providers.
 - Provided funding to aid six rural Colorado schools in buying and installing small wind turbines to provide electricity and an educational opportunity for students.
 - Awarded \$39 million in American Recovery and Reinvestment Act new energy bonds to help 17 Colorado cities, counties and higher education facilities complete a wide array of energy-saving and renewable energy projects.
 - Completed a detailed report illuminating for the first time the operations, governance and fuel mix of Colorado’s 65 gas and electric utilities.
 - Guided the Colorado Carbon Fund’s first major carbon offset project at the Larimer County Landfill and prepared to provide its first-ever award of solar hot water grants to Colorado projects.
 - Laid the groundwork for launch of the Renewable Energy Development Team, a group of consultants that will work with the GEO to sift through and assist some of the most promising renewable energy projects in the state.
 - Awarded \$800,000 in Recovery Act funds to develop compressed natural gas fueling infrastructure on the Western Slope as part of an ongoing effort to increase the use of CNG as a cleaner-burning Colorado transportation fuel.
 - Partnered with the Department of Local Affairs to increase adoption of more effective energy codes in jurisdictions statewide.
- Colorado’s New Energy Economy highlights, 2010 fiscal year**
- The New Energy Economy marks a central component of Governor Bill Ritter’s efforts to lead Colorado forward. Utilities, universities, community organizations, enterprising companies, the Office of Economic Development and International Trade, the Colorado Department of Labor and Employment, the Department of Local Affairs and many other partners in the New Energy Economy took major steps to advance Colorado’s embrace of new and diversified energy sources in the past fiscal year. The Governor’s Energy Office thanks and acknowledges these visionary leaders who are helping make Colorado a beacon in the new energy future.
- Tri-State Generation and Transmission Association neared completion of a 51-megawatt wind farm in Kit Carson County in east-central Colorado.
 - Solar leasing firms SunRun Solar and SolarCity expanded operations to Colorado, providing customers a way to install solar power with little or no up-front cost.
 - SunPower Corp. neared completion of a 19-megawatt, utility-scale solar power plant in Alamosa County, adjacent to an existing 8.2-megawatt solar plant.
 - The U.S. Department of Energy invested nearly \$770 million American Recovery and Reinvestment Act funds in Colorado as part of President Obama’s commitment to build a strong, globally competitive 21st century energy economy.
 - Solix Biofuels, a spinoff of Colorado State University, opened an algae-to-biofuels pilot facility on Southern Ute land in southwest Colorado.
 - UQM Technologies in Frederick was awarded a \$45.1 million grant from the U.S. Department of Energy to accelerate the manufacturing and deployment of electric vehicle batteries.

- Abengoa Solar installed a solar hot water heating system at a Federal Bureau of Prisons facility in Englewood. The system will provide round-the-clock hot water needs for 1,000 inmates and staff for showers, and to supply the kitchen and the laundry. The system is projected to cut natural gas use for hot water by more than half.
- Weld County planners approved the expansion of Cedar Creek wind farm east of Grover. Construction began in the summer of 2010 to increase the site from 300.5 megawatts to up to 600 megawatts.
- Colorado's community colleges launched a new "Green Advantage" certification program to ensure students receive the latest instruction in green construction practices and technologies.
- Three small hydro-electric projects won USDA grants, with GEO assistance. The projects include a 350-kilowatt system on an existing dam in Creede and developed by a local rancher.
- Wind developer RES Americas, headquartered in Broomfield, announced plans to begin work on the new Cedar Point wind farm, a 250-megawatt project near Limon.
- Numerous New Energy Economy companies opened, or announced to plans to open up shop in Colorado, including wind energy companies Bach Composite Industry and RePower USA and solar inverter maker SMA.
- The Colorado Geological Survey published new maps highlighting Colorado's geothermal resources that will aid future development of geothermal power.
- Colorado State University completed a 2-megawatt, 15-acre solar array, projected to save \$2 million in electricity costs and protect against rising electricity prices over 20 years.
- Several other large solar photovoltaic arrays were completed, including a pair of SunEdison arrays in Rifle totaling 2.3 megawatts to power the town's water and wastewater treatment plants and a 1 megawatt system to help power the city of Boulder's wastewater plant.
- The city of Denver became one of the first cities in the country to launch a large-scale bike sharing program that will make it easy for people to make short trips without requiring a car.
- The U.S. Department of Energy provided more than \$27 million to Colorado companies and institutions for various projects designed to accelerate the development of geothermal energy.
- Boulder Electric Vehicle opened a manufacturing facility in Louisville employing dozens to build all-electric delivery trucks, utility vehicles and cargo vans.
- SunEdison announced it would build a 2-megawatt plant in Norwood to supply the San Miguel Power Association, making the SMPA one of the first rural electric associations to adopt utility-scale solar.
- The town of Cortez began operating a 240-kilowatt small hydroelectric plant using an existing pipeline from McPhee Reservoir.
- Six Colorado clean-tech companies—including Vestas and Abound Solar—secured more than \$75 million in Recovery Act dollars to advance innovation in the manufacture of renewable energy and energy efficiency products.
- The Delta-Montrose Electric Association announced it would build a 6-megawatt hydroelectric plant, providing enough electricity for about five percent of its demand and saving the utility \$2 million a year in wholesale power costs. The system would be built on an existing agricultural canal.
- Siemens and NREL joined in a multi-year research project to study the performance and aerodynamics of a new class of large turbines at NREL's National Wind Technology Center outside of Boulder.
- The Rangeview Library District in Adams County opened the state's first net-zero energy use library in Brighton. The building's features include a ge-exchange heating and cooling system and a large rooftop solar array.
- Xcel and Abengoa Solar launched a pilot project that uses concentrated solar energy to supplement coal at the Cameo power plant east of Grand Junction.



A worker climbs out of a large wind tower at the new Vestas plant in Pueblo.

- Colorado lawmakers passed the Clean Air—Clean Jobs Act, which will retire, replace or repower Front Range coal-burning plants with facilities fueled by cleaner-burning natural gas or other, lower or non-emitting sources.
- The U.S. Department of Energy provided more than \$24 million in Recovery Act grants to Black Hills Energy and Fort Collins Utilities for the installation of more than 100,000 smart meters as part of efforts to develop a more intelligent electric grid.



Work begins on the foundations of wind towers at the new 250-MW Cedar Point Wind Project outside of Limon, Colorado.

Renewable Energy

Renewable energy saw unprecedented advances in 2010, with the Governor's Energy Office playing a major role in policy and legislative progress that is making Colorado one of the country's most attractive markets for new energy companies and installations—and the jobs that accompany them. Recovery Act dollars provided critical support, as the GEO and partners provided a diverse array of grants and thousands of rebates for homeowners and businesses, creating jobs and economic momentum for small wind, solar photovoltaic, solar thermal and ground-source heating and cooling system installers, among others. The GEO also led important strides for geothermal and small hydroelectric projects that will ease the way for more such operations in the future.

The benefits of developing Colorado's rich array of renewable energy resources are multiple and significant, extending far beyond the job creation critical to our state. Strengthening the renewable industry diversifies the state's energy portfolio and builds energy security by reducing dependence on finite sources of energy and, instead allows us to turn more to less-polluting, inexhaustible homegrown power. Renewable energy, increasingly cost-competitive, can also protect consumers from some of the

volatility associated with traditional energy costs. It compliments traditional energy sources through the integration of wind power with natural gas, or the blending of concentrating solar or biomass at coal-fired power plants. Renewable energy spreads projects and the accompanying jobs to more areas of Colorado.

Solar energy

The deployment of solar energy in Colorado, already accelerating under previous polices of the Ritter administration, will increase dramatically after passage of perhaps the most significant piece of New Energy Economy legislation to date. House Bill 1001 increased the state's Renewable Energy Standard (RES) by requiring investor-owned utilities to produce 30 percent of their electricity from renewable sources by 2020. This nation-leading standard is a leap from the 20 percent requirement approved in 2007. As importantly, the legislation required that three percent of all electric sales must come from distributed renewable generation over the next decade. That measure secures the market for residential solar energy and other small renewable projects, providing business certainty and creating thousands of jobs for years to come.



Cesha Johnson, center, and Chris Hibner, right, put a solar panel in place on a Greenwood Village home.

The GEO played important roles in other important legislative achievements boosting solar energy. House Bill 1342 allows construction of "solar gardens" within investor-owned utility territory. These shared solar farms allow renters and homeowners without good solar access on their properties to own a portion of solar power generated off-site.

House Bill 1349 calls for the State Parks system to produce as much energy as it consumes using renewable sources by 2020. And House Bill 1276 exempts third-party, independently-owned residential solar systems from property taxes, putting such systems on an even playing field with homeowner-owned systems.

Wind energy

Small wind systems continued to be erected across Colorado, creating a new energy source for schools, farms and rural communities. Three rural electric associations and a local government partnered with the GEO to provide rebates for small wind. Mountain View Electric Association, serving areas of eastern Colorado, led the program, installing 23 small turbines with a capacity for 76 kilowatts. Mountain View issued \$40,000 in rebates, a total matched by the GEO to leverage \$399,000 in investment in the region. The three other partners—Southeast Colorado Electric Association, town of Estes Park and Highline Electric Association—also worked with GEO to provide rebates for the installation of a total of eight small wind turbines.

Six rural schools also installed turbines last year as part of the Wind for Schools program, a collaborative effort between the GEO, Colorado State University, the U.S. Department of Energy and the National Renewable Energy Laboratory. The schools were Stratton High, Flagler High, Wellington Middle, Kit Carson Junior/Senior High, Walsh High and Burlington High. The turbines generate a small share of the school's electricity and provide an educational

resource for teachers, students and local residents who may be considering adding wind power. Additionally in program year 2010, two more schools were awarded Wind for Schools grants of \$10,000 each to put up turbines. Those schools were Nederland High in Boulder County and Ponderosa High in Douglas County.

The GEO continued its partnership with Colorado State University to provide wind-measuring devices called anemometers to landowners and others around the state to determine the most effective areas to site small turbines. CSU installed eight anemometer towers in eight counties in program year 2010, and continued to collect data from eight additional sites in six counties. Promising wind sites continued to be recorded through the program, particularly in southern and eastern Colorado.

Geothermal

The GEO continued to lay important groundwork to develop geothermal energy—a clean, reliable and consistent source of renewable power. Geologists have identified Colorado as an important site for geothermal energy development. A study by the Massachusetts Institute of Technology found Colorado to have more



Workers move a large wind tower at the new Vestas plant in Pueblo.

heat energy available at a two-mile depth than any other state in the U.S.

In early 2010, the GEO developed the first Geothermal Power and Direct-use Applications Grant program and solicited proposals from local governments, individuals and companies for projects designed to develop Colorado's geothermal resources, either for direct use or power generation. The GEO will provide recipients funding from a pool of \$300,000 of Recovery Act dollars.

The GEO funded a full-time professorship at the Colorado School of Mines as well as an expert geologist in a full-time position at the Colorado Geological Survey

to assist updating and expanding the mapping of the geothermal hotspots in Colorado, and providing developers with technical assistance. State and federal officials from the Bureau of Land Management are working together to address potentially conflicting laws regarding geothermal resources through a Memorandum of Understanding. Additionally, Colorado's Geothermal Working Group organized informational meetings in different parts of the state to educate the public about the benefits and the implications of geothermal energy development in their communities.

Small hydroelectric

The GEO worked closely with stakeholders and the Federal Energy Regulatory Commission in developing a breakthrough Memorandum of Understanding and pilot program that will streamline the permit process for small hydro projects while maintaining high levels of environmental protections for streams and other waterways. The agreement is expected to open the door to at least 20 new projects within the first year by reducing sizable federal permitting hurdles that can deter those interested in developing small hydropower systems. This is a substantial change considering only 24 projects have been approved in the past 30 years. The Idaho National Laboratory found a potential in Colorado for more than 1,400 megawatts from small hydropower projects.

Complimenting that work, the GEO provided technical and policy support for legislation that changes the way small hydro projects are valued for property tax purposes. The measure, Senate Bill 19, will help reduce the up-front costs associated with installing a new small hydroelectric generating plant, removing another hurdle for project developers.

Renewable energy grants

Grant dollars, including significant Recovery Act funds, helped push many renewable energy projects into action across Colorado. Program year 2010 saw GEO award its largest New Energy Economic Development (NEED) grant ever—\$305,000—to a ground-source heating and cooling project for the Calhan School northeast of Colorado Springs.

Grants also funded installation of several large solar photovoltaic systems, including one to offset irrigation pumping costs at a large Alamosa farm and another to produce energy for a live-stock feeding operation in Rocky Ford. The GEO also provided grant dollars to small-hydropower system that will power municipal buildings in Ouray and, in a first-of-its-kind grant, awarded nearly \$300,000 to the Delta-Montrose Electric Association for what has proved to be a very popular program to help fund residential ground-source heat pump projects in the utility's service area.

Proposals for numerous additional Recovery Act-funded grants to build renewable energy projects were solicited early in program year 2011. Those will lead to dozens of new projects in the coming fiscal year.

Recharge Colorado: Renewable energy rebates

As part of its comprehensive efforts to create jobs and stimulate the new energy marketplace in Colorado, the GEO offered a slate of rebates to encourage homeowners and businesses to install renewable energy measures. In the spring, GEO provided rebates to add solar thermal, solar photovoltaic, small wind systems

Public enthusiasm for the rebate program was high, ratcheted up by extensive news media coverage of the launch of the Recharge Colorado website and heavy promotion by the GEO's Recharge Colorado marketing campaign. Leading up to the launch, the GEO engaged with hundreds of contractors statewide so they could promote the rebates to their customers and increase business. Utilities and local governments were important partners in the program; 12 local governments and utilities committed more than \$900,000 to the pool of rebate funds so their residents and customers could benefit.

Rebates for renewable energy measures were popular. The public reserved nearly 200 rebates worth nearly \$1 million by the close of FY10, many of those for residential solar photovoltaic systems. The rebates also delivered a needed economic shot in

the arm to contractors, many of whom saw a helpful bump in business accompanying the rebate launch.

Renewable Energy Development Team

Prospective developers of renewable energy projects often contact various state government agencies to learn how they can move projects forward. To help landowners, communities and developers sort through this and determine which projects make the most sense, the GEO created the Renewable Energy Development Team (REDT), to launch in fiscal year 2011.

The REDT is a team of consultants that will assist these proposals by conducting screening, technical and financial analysis and initial project development work for those projects of greatest merit. The REDT will include experts from the biomass, small hydro, solar electric, community-based wind and geothermal industry sectors as well as finance and project development expertise. The primary goal of the program is to move selected renewable energy projects through early project development and to increase their likelihood of deployment. The GEO anticipates that up to 225 projects will receive an initial review, with roughly half moving forward to the next stage of development.



Amy Zmolik of Encana Natural Gas, Inc. stands next to a natural gas pump and vehicle in downtown Denver.

Biomass and Alternative Fuels

Efforts to incorporate alternative fuels and biomass in a way that diversifies Colorado's New Energy Economy continued with the opening of at least four projects using forest debris and beetle-kill to produce heat. The GEO was also deeply involved in expanding the use of compressed natural gas as a transportation fuel and in increasing the use of alternative fuels in vehicle fleets. Such steps are building new markets, creating local jobs, increasing energy security, easing dependence on foreign petroleum and reducing greenhouse gas emissions.

Biofuels and vehicles

The GEO continues to manage the Governor's Biofuels Coalition (GBC) as it educates and trains fleet managers, decision-makers and the general public on the benefits of traditional and advanced biofuels. By offering a small grant to fueling-station owners, the GBC continues to increase the amount of biofuels used in Colorado through the development of fueling stations selling biofuels. Another seven stations were developed in program year 2010, bringing the total to 116 statewide. The GBC represents Colorado businesses, public agencies, environmental groups,

agricultural interests and others involved in the production, distribution, promotion and use of biofuels. The GBC and its volunteer members have exceeded the expectation of 100 stations in the state, and will continue leading efforts to add stations into the coming year.

Separately, the GEO also works closely with state and local fleet managers through its "Greening Government" program to diversify fuels used by agency vehicles. The state fleet added two mobile E-85 storage tanks to provide state employees greater access to the biofuel. State fleet also established a statewide biofuels policy applicable to all agencies requiring use of biofuels when available. State fleet managers are also improving tracking of alternative fuel use. In June of 2010, use of biofuels in state fleet vehicles rose to 4,885 gallons, a leap from the baseline month of June 2006, when 163 gallons were consumed.

Colorado continues to be an important leader for companies and academic centers producing and researching existing and next-generation biofuels. Solix Biofuels, a first-of-its-kind algae-to-biofuels pilot facility, began operations this past program year on Southern Ute land in



Keziah Peterson uses a CNC Router as she runs a test program at the Boulder Electric Vehicle company in Lafayette, Colorado.

southwestern Colorado. Costilla County Biodiesel, a recipient of GEO grant dollars, continues to produce, and advanced biofuels companies including ZeaChem, Range Fuels and AmBio Diesel all continue to call Colorado home.

The GEO's work on recent legislation to provide tax credits for converting vehicles to electric, and plug-in hybrid electrics—as well as for truck owners who add idle-reduction technologies to their big rigs—began to show results this past year. As many as 300 idle-reduction units were added to trucks in the first half of 2010, a number projected to save more than 700,000 gallons of diesel fuel annually, cutting petroleum use, air pollution and greenhouse gases.

Compressed natural gas

The GEO has advanced the use of compressed natural gas (CNG) as a transportation fuel, an effort that reduces emissions, dependence on petroleum and creates a greater market for cleaner-burning, homegrown Colorado natural gas. The GEO awarded nearly \$800,000 in grants to improve infrastructure for CNG through construction of fueling stations for CNG vehicles in Grand Junction and Rifle.

The projects, part of a broad effort that includes natural gas companies on the Western Slope, are expected to offset more than 250,000 gallons of diesel fuel in the first year alone and fuel dozens of light and heavy-duty trucks operating in the area, including fleet vehicles in Garfield County and large vehicles such as garbage trucks and busses in Grand Junction. The stations compliment other potential sites under consideration and begin to extend more of the Interstate 70 corridor to CNG-fueled vehicles in western Colorado and eastern Utah.

In addition, a number of Colorado fleets are increasing their CNG-fueled vehicles, including those operated by UPS, Encana and Pioneer. Through the work of FuelTek and a grant provided by the GEO, 31 light-duty vehicles were retrofitted to be able to use CNG in the past program year, bringing the total FuelTek vehicles retrofitted through this work to 45.

Biomass

The past program year saw more progress as the GEO and its partners continue efforts to turn the state's pine beetle devastation into an opportunity for entrepreneurs, an energy saver for communities and nonprofits and a low-carbon or carbon-

neutral source of community power and heat. At least four more projects came online using forest debris, beetle-kill wood and major stores of wood supplies from various efforts to thin overgrown forests to reduce wildfire risk. These materials form a dependable supply of material for conversion to wood pellets and other products to fire heating systems for swimming pools, schools, homes, recreation centers and other buildings.

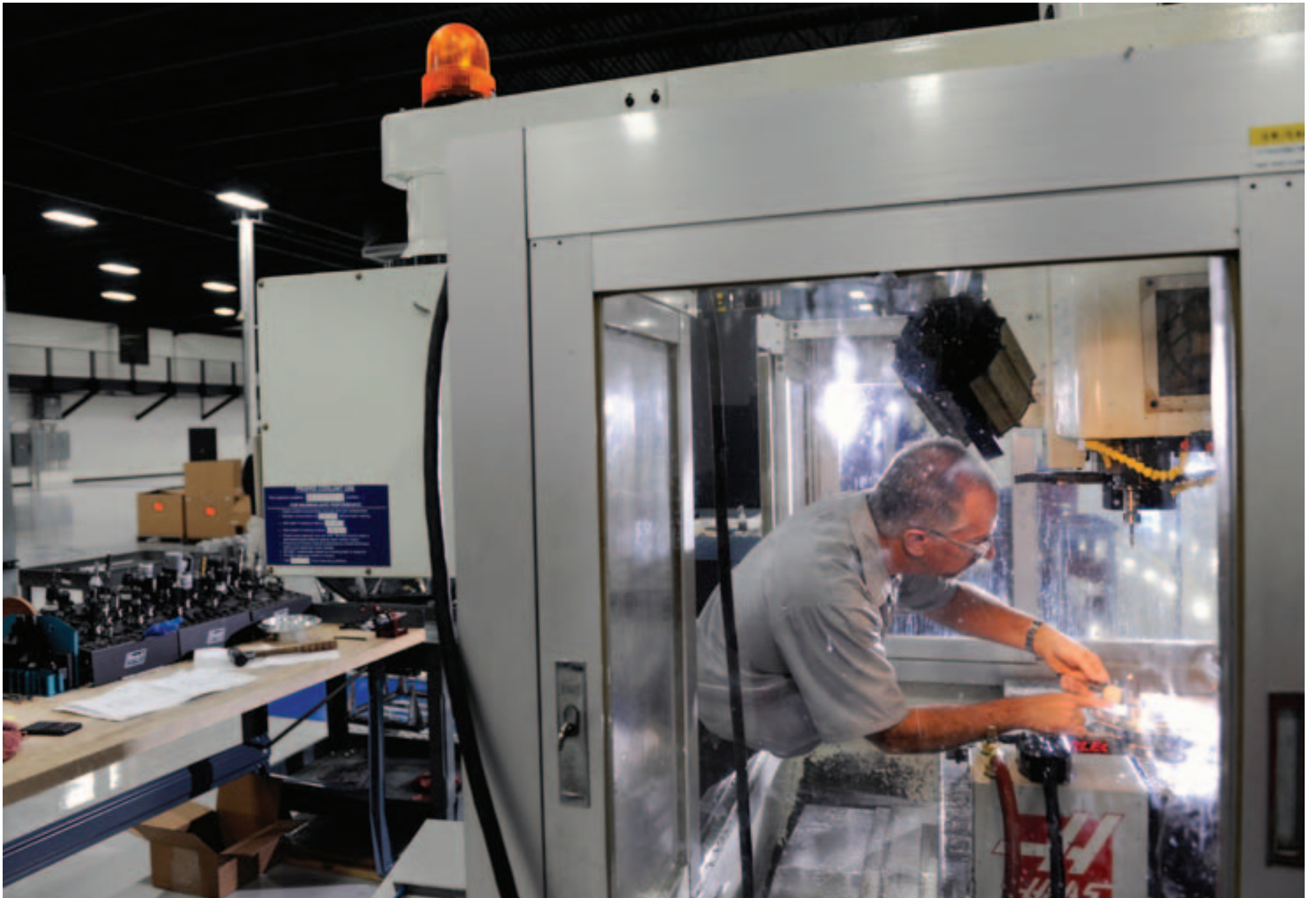
Developments in program year 2010 included completion of projects that use wood pellets to heat the South Park Recreation Center in Fairplay, a hot water boiler system at the Salvation Army Mountain Camp in Estes Park, two hot water boilers at Mountain Parks Environmental Center in Beulah west of Pueblo and a heat system at Mountain Parks Electric in Granby. Colorado Springs Utilities also continued testing an approach that will mix wood pellets with coal to fire turbines at one of its central power plants. Additional projects in the state include a biomass heating system at the National Renewable Energy Laboratory and the Colorado State Forest Service.

The South Park facility in Fairplay serves as an important example of potential energy savings. By turning to wood pellets, the facility dramatically reduced the need

for costly propane to heat the swimming pool, saving the recreation center more than \$40,000 per year in heating costs while lowering greenhouse gas emissions by 225 tons per year, the equivalent of removing 30 cars from the roads. The project was assisted with funding from the GEO and the Department of Local Affairs.

The GEO provided technical and policy support for legislation that will assist the development of biomass energy projects by changing the way they are valued for property tax purposes. The measure, Senate Bill 177, will help reduce the up-front costs associated with installing a new plant and therefore remove another hurdle for project developers. The bill also specifies that such facilities are eligible for renewable energy credits for utilities complying with Colorado's renewable energy standard. The GEO also solicited grants to be awarded this year to promote woody biomass in local communities, reduce fossil fuel use and greenhouse gas emissions and create jobs in the biomass industry.

Jim Gilchrist runs a CNC mill at UQM Technologies, Inc. in Longmont. The company makes parts for electric vehicles.





David Poindexter puts insulation in the crawlspace of a house in Denver. The weatherization program insulates low income housing.

Energy Efficiency—In the Home

Our homes account for significant energy use—21 percent of U.S. consumption according to the Energy Information Administration. Reducing residential energy use is an ongoing challenge because even as we replace older refrigerators, furnaces, water heaters and other appliances with more efficient models, we are adding many new electronics to the home: flat-screen televisions, laptops, video game systems, cell phones and other plug-ins.

The GEO continues to work across many fronts to reduce residential energy consumption, save homeowners money and build the market for efficiency improvements. Initiatives in the past program year were boosted significantly by federal Recovery Act dollars and included a major increase in income-qualified weatherization and rebates for insulation, energy audits, duct sealing and other measures. Additionally, the GEO partnered with builders, realtors and building code officials to promote more effective energy code standards and increase the market share of ENERGY STAR New Homes in Colorado. The GEO also awarded grants designed to assist businesses providing residential efficiency services.

Weatherization assistance

Reducing energy costs for families who need it most is the goal of the GEO's weatherization program, and the 2010 program year saw record levels of assistance due to significantly higher funding and wider eligibility through the Recovery Act. In all, 7,440 homes and rental units statewide were weatherized, compared to just below 3,500 homes in fiscal year 2009. More families were eligible as well, with incomes up to 200 percent of the Federal Poverty Level qualifying, higher than the traditional 150 percent level. Per-unit expenditure allowances nearly doubled, allowing additional insulation and sealing work as well as the installation of more efficient lighting and appliances.

The increase was rooted in the infusion of nearly \$80 million of Recovery Act dollars for the GEO's weatherization program over three years, above and beyond the Department of Energy's annual allocation for the program. To meet the higher production goals these dollars demand—and to provide more localized service within regions—the GEO partnered with 11 agencies across Colorado to provide weatherization, an increase from eight partners in fiscal 2009. More work led to the stimulus

intended by the Recovery Act: 150 direct jobs were created and over 250 jobs were sustained with the expansion of the program. Additional indirect jobs were created with the greater need for insulation and related supplies, equipment and vehicles.

The GEO credits the work of its partner agencies for meeting the higher production goals that accompanied funding increases. Those partners include: Northwest Colorado Council of Governments, Housing Resources of Western Colorado, Longs Peak Energy Conservation, Energy Resource Center in Colorado Springs, Arapahoe County Weatherization Division, Pueblo County Department of Housing and Human Services, and Northeastern Colorado Association of Local Governments. The GEO also added two new agencies to meet demand: Four Corners Office for Resource Efficiency in the Four Corners area and Veterans Green Jobs in the San Luis Valley. Veterans Green Jobs was also added as the new partner for Denver and Jefferson counties. Another partner was also new this year: Energy Outreach Colorado was added to weatherize centrally heated, multi-family buildings, with five or more units. EOC fills an important need and provides additional service to Colorado residents statewide.

Additionally, GEO initiated conversations with various utility partners to expand upon the successful energy efficiency partnership it has with Xcel Energy, which contributed \$2.6 million in the past program year. The program now has leveraging partnerships in place with Atmos Energy, Source Gas, and Eastern Colorado Utilities. These partnerships allow utilities to contribute funds that allow more energy-saving measures to be installed in homes. A new partnership was formed this year with the San Luis Valley Rural Electric Cooperative and Black Hills will be contributing funds to the program in 2010–2011.

GEO's weatherization program put strong emphasis on training improvements in 2010. A third-party expert, Saturn Management Resources Inc. was brought in to increase training and improve standards. Courses will focus on core competencies including auditing and inspection, building shell technician, and combustion appliance technician. One of the key components of this training program is developing a skilled workforce at the local level. Each agency will be required to have a full-time trainer on staff to ensure ongoing education and competencies.

The GEO's weatherization program was also awarded a nearly \$1 million ARRA grant to further improve training through establishment of certificate programs with Red Rocks and Pueblo community colleges and delivery of trainings through a combination of on-line, classroom and field teaching methods. The goal is to train 460 workers in various components of weatherization and ensure current and future workers are trained to high standards. Additionally, by cultivating local trainer experts inside the community college system, the program hopes to sustain a weatherization curriculum beyond the grant timeframe.

Recharge Colorado: Efficiency rebates

As part of its comprehensive efforts to create jobs and stimulate the new energy marketplace in Colorado, the GEO offered a slate of rebates designed to increase efficiency in the home. In the spring, GEO provided rebates to upgrade insulation, improve a home's air and duct sealing, help pay for energy audits and energy monitors as well as reduce the cost for purchasing ENERGY STAR appliances, energy efficient furnaces and hot water heaters.

Public enthusiasm for the rebate program was high, ratcheted up by extensive news media coverage of the launch of the Recharge Colorado website and heavy promotion by the GEO. Leading up to the launch, the GEO engaged with nearly 700 contractors and retailers statewide so they

could promote the rebates to their customers and increase business. Utilities and local governments were also important partners in the program; 13 utilities committed \$278,000 to help market the ENERGY STAR appliance rebates to their customers. Additionally, 15 local governments and utilities committed nearly \$1 million to the pool of rebate funds so their residents and customers could benefit.

Rebates for ENERGY STAR appliances—dishwashers, washing machines and refrigerators—proved to be the most popular. But the public also reserved hundreds of rebates for highly efficient furnaces, hot water heaters and home insulation. By the end of the fiscal year in June, 3,700 Coloradans had redeemed more than \$800,000 worth of energy efficiency rebates. The rebates also delivered a needed economic shot in the arm to contractors and retailers, many of whom saw a rise in orders accompanying the rebate launch.

The Recharge Colorado rebates replaced the GEO's Insulate Colorado program with more varied rebates and higher rebate levels. The Insulate Colorado program had offered rebates up to \$300 to encourage homeowners to add or upgrade insulation. Insulate Colorado wrapped up in the spring of 2010 with 1,750 rebates issued since the program began in 2008 through April. That number does not include thousands of additional rebates issued by utilities that operated their own program modeled after



Jim Tanner of B&W Glass of Cheyenne, Wyoming gets supplies as he works to install large skylights in an Energy Star home north of Fort Collins, Colorado being built by L.R. Barker Builders, Inc.

Insulate Colorado, though incentive levels varied. Those include Xcel Energy, Colorado Springs Utilities, Source Gas, Atmos Energy, Colorado Natural Gas and Fort Collins Utilities. Xcel alone had issued more than 4,800 rebates for insulation work for its customers through April.

Energy codes

In 2007, the Colorado General Assembly passed HB 1146, which required local governments with a building code to adopt—at a minimum—the 2003 International Energy Conservation Code (IECC). Since then, the GEO has provided training, resources and other support to the state's 333 code jurisdictions.

The GEO contracted with the International Code Council to provide a series of trainings across the state, focusing on the 2009 version. In fiscal year 2010, the GEO held 13 trainings, attended by 364 people, most of whom were building code officials.

In December, the GEO entered an interagency agreement with the Department of Local Affairs (DOLA) to administer the Energy Codes Support Program. Signifi-

cant funding has been allocated to provide all 333 local code jurisdictions with the tools, support and resources necessary to encourage adoption and ultimately enforcement of the 2009 IECC. In an enhancement to past trainings, DOLA began by contacting local code jurisdictions and key decision makers to ensure they are engaged in the program.

In fiscal year 2010, DOLA completed an initial assessment of all 333 local code jurisdictions and sought proposals for a contractor to implement advanced energy codes. The ultimate objective of the program is to ensure buildings reviewed achieve an average of 90% compliance with the 2009 IECC.

ENERGY STAR New Homes

The momentum behind the ENERGY STAR New Homes (ESNH) program continues to grow dramatically under the leadership of the GEO and its partners in local governments, community organizations, utilities, homebuilder associations and Home Energy Rating providers. Market penetration of ESNH continues to climb. Through

June 2010, ESNH numbers reached 44.5 percent of market share—up from 7.8 percent in 2006.

The program's aim is to increase the number of energy efficient ESNH built and on the market. The results show that home builders and home buyers alike are embracing energy efficiency even in a challenging housing market. In fiscal year 2010, homebuilders built 3,578 ESNH homes in Colorado. These ESNH will save homeowners more than \$1 million on their utility bills in 2010 alone.

The GEO has taken numerous steps to broaden awareness and appeal of ESNH, through more partnerships, trainings, homebuilder rebates and a program to offer mortgage discounts on ESNH. Together, the 2010 program unifies over 130 program partners in 13 regions across the state. Homebuilders participating reached 356 in 2009. Details of calendar year 2009 efforts include:

■ GEO partners conducted over 57 ESNH trainings, with over 1,550 attendees. That pace is anticipated to grow in 2010. So far in 2010, 26 trainings have been delivered to nearly 600 attendees. These trainings, funded in part by the GEO matching grants, cover topics such as marketing of ESNH, building science and more; they target homebuilders, realtors, contractors, appraisers, Home Energy Raters and building code officials.

■ In March of last year, the GEO began offering a \$300 rebate directly to homebuilders who construct and certify ENERGY STAR New Homes in Colorado. The GEO has issued 139 rebates to homebuilders who built an ESNH where the local utility did not offer an incentive.

■ The GEO has also developed the ENERGY STAR Mortgage Program, derived from a pilot with the Bank of Colorado. The new program offers buyers of ENERGY STAR qualified homes the same one-quarter to one-half percentage point interest rate reduction through 1 full discount point. The GEO awarded grants to two lenders to offer the program in fiscal year 2011.

■ Colorado's success in this area was recognized by the Environmental Protection Agency, which for the second year in a row named the GEO an ENERGY STAR Partner of the Year 2010 award winner. Additionally, the GEO was recognized by the American Council for an Energy-Efficient Economy as one of five national winners for state residential efficiency programs based on its ENERGY STAR New Homes work.

Retrofit Ramp-Up Initiative

The GEO partnered with Boulder, Denver and Garfield counties, as well as Xcel Energy, to bring home a \$25 million grant under the Department of Energy's Retrofit Ramp-up Initiative in April. The award

will help launch a retrofit program that will stimulate economic growth and investment in Colorado through large-scale retrofits in neighborhoods and commercial districts in urban, suburban and rural areas. Delivery of retrofits will be coordinated through various programs such as a "Two Techs and a Truck" model that provides for on-site outreach, audit and implementation services to businesses and residential homeowners and tenants. The on-site work could include efficiency testing and equipment installation.

Additional grants

The GEO's strategic use of Recovery Act dollars helped develop the market for energy efficiency in residential settings through a variety of grants that will save homeowners and tenants dollars through greater energy efficiency and reduce pressure on the electric power grid and natural gas supplies for heating and cooling.

Those grants included: Innovation Funding for Energy Efficiency grants, which went to local businesses to assist with the cost of bringing new residential energy efficiency products or services to market (\$60,984 to four companies) and Energy Efficiency and Expansion in Training grants, which went to local businesses and non-profits that provide residential energy efficiency services to aid in business expansion and new employee training (\$90,568 to five companies).

Residential Energy Efficiency Working Group

Governor Ritter and the GEO leadership understand the enormous untapped potential in residential energy efficiency improvements, as well as the economic development opportunities for retrofitting homes and apartments to save energy and utility costs.

In program year 2010, the GEO convened the Residential Energy Efficiency Working Group (REEWG), with a mission to "accelerate market transformation in the residential energy efficiency retrofit industry thereby creating a roadmap of standard practices, quality assurance, training, work specifications, financing options, and consumer/contractor education."

The group, which meets monthly at the GEO offices, is open to a wide spectrum of stakeholders in the energy efficiency industry, including local governments, utilities, contractors, financial institutions, non-profits, businesses and educators. The group includes more than 70 members with a focus on lowering financial barriers to energy efficiency, how to motivate residents to invest in efficiency and how to ease the process involved.

The group, in partnership with GEO, prepared for a financial summit early in program year 2011 designed to highlight opportunities for lenders, investors and the energy efficiency industry. Governor Ritter and Gil Sperling, a senior advisor at the U.S. Department of Energy, were among the speakers at the event.



Andrew Brake, center, and Steve Duran, right, of T&T Electric switches lighting to a more energy-efficient system at South Mesa Elementary in Pueblo.

Energy Efficiency—In Schools and Buildings

Our buildings—office buildings, hospitals, schools, shopping malls—are tremendous energy consumers. The lights, computers, heating, ventilation and other equipment in commercial buildings account for roughly one-fifth the country's energy use and over 70% of the country's electrical consumption. The GEO is addressing this through programs to make existing buildings more energy efficient with retrofits and by working to ensure new buildings are designed with energy efficiency and renewable energy potential in mind from the start. Recovery Act dollars provided the opportunity to offer significantly more grant dollars in program year 2010 and expanded programs designed to save money, tax dollars and energy in commercial and public buildings.

Energy Performance Contracting

The GEO's energy performance contracting program (EPC) continues to grow, adding 16 new partners in the last program year, bringing the total to 147 agencies. These include state departments, counties, cities, K–12 schools, higher education institutions and special funding districts all engaged in installing energy improvements, and paying for the work with utility bill savings. Some participants have also

added renewable energy to supply their own clean source of electricity or heating.

As of the end of the 2010 program year, 70 agencies have projects either under development or in the construction stage. These projects represent \$237 million in energy efficiency investments in Colorado using the EPC program, a reminder that energy efficiency is a core part of the New Energy Economy, creating jobs and saving taxpayer dollars.

To expand the reach of the program, GEO continued to contract with Trident Energy Services, Inc. and Nexant, Inc. in the past fiscal year to provide technical support to agencies throughout the EPC process. With their assistance, GEO has been able to increase the services of the EPC program to better track projects, provide more timely and in-depth reviews of projects and help agencies avoid and deal with challenges that might arise in the EPC process.

The EPC program is critical to installing energy efficiency by eliminating the high up-front costs that can come with a building's energy overhaul. The GEO works with energy service companies, which determine the most cost-effective upgrades. The projects are then financed in a way that the cost of the efficiency overhaul is

paid for with the savings from lower utility bills, various rebates, Recovery Act dollars and capital contributions, when available.

The Manitou Springs School District serves as a shining example. Recent monitoring of the impact of an EPC found that the school district saved \$135,000 in utility costs from July 2009 through March 2010 tied to reductions of 69,000 therms of natural gas and 821,000 kilowatt-hours of electricity. These savings show an overall energy reduction of over 52 percent from the district's energy baseline prior to implementing the EPC work.

Main Street Efficiency Initiative

The GEO launched a new program in 2010 called the Main Street Efficiency Initiative (MSEI) designed to boost projects that reduce energy costs for local businesses, create local jobs and reduce carbon emissions. The program included "Main Street Efficiency in a Box," an on-line road map and basic training to help communities become more energy efficient, a competitive grant to help small businesses achieve energy efficiency goals and a pair of small business-focused efficiency programs funded with federal Energy Efficiency Conservation Block Grant dollars through the Recovery Act.

While existing buildings, particularly small businesses, present significant challenges for incorporating energy savings and renewable energy opportunities, the GEO identified this market as critical to building the New Energy Economy at a local level. It developed the MSEI program using best practices from around the state and country while providing new tools and resources

Trident Energy Services was selected to provide project management and technical support for all MSEI programs. With the firm's assistance, GEO has been able to expand the services of the MSEI to include more tools and resources for participants, better track local program results, and provide technical support of MSEI participants.

High Performance Building Program

The High Performance Building Program (HPB) is an ongoing effort to help Colorado continue to lead the way in building highly efficient, cost-effective, and pleasant buildings in which to live, work, and learn. The program worked with over 40 new public building projects—including 22 schools—in the fiscal year to help incorporate design strategies that will save taxpayers energy costs for these buildings'



A drill rig is set up for a geothermal project in front of the state capitol in downtown Denver.

lifetimes and let their occupants work more comfortably.

Examples include a wastewater treatment plant in Nederland with an enhanced design that will use 6 percent less energy and save \$10,000 annually and a school in the San Luis Valley designed to be one of the most energy-smart in the country. These and many other HPB-aided projects are consistently showcasing the practical benefits of better design.

The program has worked with projects across the state to spread the message that an integrated design process that includes all stakeholders consistently results in better outcomes. In addition to providing high-level consultation to public building owners and design teams, the HPB program has dramatically increased educational efforts to the private market. From at least monthly high performance design webinar series to statewide workshops, the consultants to the GEO are sharing best practices in ways that will allow designers and other interested parties to access the information they need to stay on the cutting edge.

This program year saw the official launch of the Colorado Collaborative for High Performance Schools, or CO-CHPS, a

new school-specific green building rating system developed specifically for and by Coloradans. This system calls for greater emphasis on energy and water conservation, and requires schools to think about smart energy planning for the future. This year also saw the development of the contractor's LEED toolkit to make the LEED process flow more smoothly on the job-site, a number of informational one-pagers on high performance design topics, and best practices defined for Colorado specific building types. In a difficult market for new commercial construction, the HBP program recognizes the importance of building smart in getting Colorado's built environment on the track to success.

Additional grants

The GEO's strategic use of Recovery Act dollars helped develop the market for efficiency services in schools and buildings through a variety of grants that will save taxpayer dollars through greater energy efficiency. Those grants included: LEED for Existing Buildings Certification Program (\$78,630 to two universities); Energy Efficiency in Historic Buildings (\$146,626 to four historic building projects) and Energy Managers for Boards of

Cooperative Educational Services, which help school districts reduce utility costs through the use of energy managers (\$245,760 to two BOCES).

Grants also went to projects proposing to build in more energy efficiency from the very start. These include grants for High Performance Design (\$150,000 to a public housing authority and a public school), for designing projects to be 'Renewable Ready' through additions such as conduits or other devices that set the stage for the installation of solar, geothermal or other systems (\$50,000 to a non-profit animal shelter) and for work that can aid in the conversion of a historic building in poor condition into a high performance building (\$82,740).

Additionally, the GEO's K-12 program provided direct grants and technical support worth over \$400,000 to 14 school districts for work including high performance building design, installation of energy efficient equipment, assistance for school districts to better measure and manage their energy usage as well as training and education opportunities for students, teachers and facility personnel on energy efficiency and renewable energy topics.

The GEO also provided funding for energy efficiency in buildings through its New Energy Economic Development (NEED) grant program. More than \$530,000 worth of commercial NEED grants in fiscal year 2010 went to four projects to support greater building efficiencies. That included the largest NEED grant yet provided: \$305,000 to replace a deteriorating HVAC system with ground-source heating and cooling at the Calhan School northeast of Colorado Springs.



Solar panels are seen on the roof of the state capitol in downtown Denver.



Cows graze near wind turbines that are part of the Kit Carson Windpower Project near Bethune, Colorado.

Electric & Gas Utilities and Transmission

Utilities generate, distribute and meter the electricity and heat critical to our fast-moving, productive society. The GEO works closely with Colorado's 65 electric and gas utilities, from its largest—Xcel Energy and Tri-State Generation and Transmission Association—to our municipal utilities, rural cooperatives and local gas distribution companies. The GEO teams with utilities to provide rebates for installation of energy-saving measures, and engages utilities, the legislature and the Public Utilities Commission (PUC) to advance the New Energy Economy. The GEO also focuses on developing efforts to construct new high voltage transmission lines to transmit clean power from Colorado's rich renewable energy zones and connecting more utility-scale renewable energy projects to the state's power grid.

Utilities

The GEO moved on several fronts during program year 2010 to build partnerships with utilities that advance the New Energy Economy. The GEO worked with Xcel Energy on significant matters before the PUC, teamed with numerous utilities statewide to provide appliance, insulation, efficiency and renewable energy rebates, partnered with stakeholders to conduct

analysis of utility data to prepare and produce technical and policy reports and launched a Smart Grid Task Force to map out a path forward for a more intelligent power grid in Colorado. The fiscal year also saw important efforts from non-regulated utilities to implement energy efficiency and renewable projects.

At the PUC, GEO has provided input, along with multiple stakeholders, including Xcel Energy and the Colorado Department of Public Health and Environment, to implement the provisions of the landmark legislation in House Bill 1365. The law requires PUC-regulated utilities to dramatically reduce pollutants associated with coal-burning power plants on the Front Range. The GEO will push for the most cost-effective coal replacement approach that reduces nitrogen oxides, sulfur dioxide and carbon dioxide emissions, in large part with natural gas generation.

Additionally, the utilities program worked at the PUC and with Xcel to make it easier for state and local governments to sign contracts with utilities that help finance large solar power systems on public buildings. The GEO also worked with Xcel at the PUC to develop a pilot project to increase the value of electricity generated by commercial solar systems.

The utilities program also developed voluminous materials for its first-of-its-kind Utilities Report, a document designed to give Colorado residents and stakeholders an unprecedented level of detail about the state's 65 electric and gas utilities, and organize it in one place. The report provides an in-depth description of the state's sprawling utility marketplace and includes individual profiles of all 65 utilities, complete with a breakdown of their generation, fuel mix, incentives for energy efficiency and renewable energy, governance structure, customer split between residential, commercial and industrial, rate information and policy perspectives on climate change and other matters.

The program also made important progress on an update of the Colorado Climate Action Plan, procuring modeling expertise to identify how rural electric cooperatives and municipal utilities can meet the 20 percent carbon dioxide reduction by 2020 goal established in the Governor's Climate Action Plan. The final report is expected to be published late in 2010.

Legislatively, the utilities program helped shepherd Senate Bill 180, which established a Smart Grid Task Force composed of representatives from industry, utilities and government. The task force,

under the leadership of the utilities program, will produce a final report to be released in early 2011 that will report on how Colorado can best move forward in developing an intelligent, 21st century power grid capable of integrating more distributed renewable energy, enhancing energy-savings through more two-way communication between utility and consumer and improving reliability in an increased electrified, networked world. The report could help in crafting legislation should lawmakers and the incoming administration want to further Colorado's leadership position in this emerging area.

Other notable utilities program accomplishments for fiscal year 2010 include:

- Award of a grant for researchers at Colorado State University to create a new energy pricing model that reflects electric power production's impact on the environment and public health. The team will create a report outlining how factors such as air pollution, water consumption, climate change and health effects should be factored into the price of energy.
- Launch of a formal, first-of-its-kind Colorado study with respected firm R.W. Beck and three utility partners—Holy Cross Energy, San Luis Valley REA and

Fort Collins Utilities—to determine the economic benefits and impacts of tying rooftop solar energy and hydropower operations into the grid for municipal and rural electricity providers.

■ Engagement with Tri-State Generation and Transmission Association—which provides roughly 15 percent of the state’s generation capacity—as it completes a sweeping review of its generation portfolio of coal, natural gas and wind. As Tri-State moves forward with finalizing an electric resource plan, the GEO will provide a thoughtful and long-term view on the advantages of pursuing a balanced mix of new and conventional energy sources to reduce the risk associated with water constraints, future federal clean air and climate regulations.

Both Xcel Energy and Black Hills Energy, the state’s two regulated electric utilities, continue to make great strides in meeting the state’s renewable energy goals and building larger increments of clean energy and energy efficiency into their planning. Program year 2010 also saw more promising actions from non-regulated utilities to advance renewable energy in Colorado. Examples include:

■ SunEdison announced it would build a 2-megawatt plant in Norwood to supply the **San Miguel Power Association**, making the SMPA one of the first rural electric associations to adopt utility-scale solar.

■ **The Delta-Montrose Electric Association** announced it would build a 6-megawatt hydroelectric plant, providing enough electricity for about five percent of its demand and saving the utility \$2 million a year in wholesale power costs. The system would be built on an existing agricultural canal.

■ **Tri-State Generation and Transmission Association** neared completion of a 51-megawatt wind farm in Kit Carson County in east-central Colorado.

■ **Colorado Springs Utilities** continued testing an approach that will mix wood pellets with coal to fire turbines at one of its central power plants.

Transmission

The growth of the New Energy Economy puts a sharper focus on bringing utility-scale renewable energy to the marketplace. Expanding Colorado’s high-voltage transmission infrastructure to deliver that electricity to the markets is the primary focus of the GEO’s transmission program.

A key achievement in program year 2010 saw the completion of the Renewable Energy Development Infrastructure (REDI) Project, which examined the technical, financial and policy issues surrounding the challenge of speeding the construction of new high voltage transmission lines. The project—consisting of a video, a written report and several hundred pages of backup technical reports—outlined how Colorado’s electricity sector can reduce carbon

dioxide emissions 20 percent over the next decade by expanding transmission and utility-scale renewable energy, increasing emphasis on energy efficiency and developing a greater role for natural gas.

The REDI report concludes that expansion of Colorado’s high-voltage transmission infrastructure will considerably improve the reliability of the state’s electricity delivery system and accommodate greater development of renewable energy from rural Colorado to electric customers across the state.

This activity set the foundation for the focus of the transmission program’s activity moving into next fiscal year: the Strategic Transmission and Renewables (STAR) Project. The STAR report will lay out key generation and transmission challenges that face Colorado and detail the most efficient and effective actions that Colorado and regional transmission stakeholders should accomplish to address those challenges beginning in calendar year 2011 and beyond.

In another important program year development, the legislative authority of the Colorado Clean Energy Development Authority (CEDA) was clarified in a way that may permit CEDA to offer financing to improve the viability of tie-in lines that connect to the utilities major “backbone” transmission lines. The GEO provides staffing and management for CEDA.

The GEO’s transmission program manager continues to communicate widely

with a variety of utilities, offices, associations, and agencies engaged in utility-scale renewable energy and transmission expansion initiatives. The primary entities are Xcel Energy, Tri-State Generation and Transmission Association, the Colorado Public Utilities Commission, the Western Governors’ Association (WGA), the Western Interstate Energy Board, the Colorado Coordinated Planning Group, the Colorado Long Range Transmission Planning Group, the Committee on Regional Electric Power Cooperation, Interwest Energy Alliance, the Colorado Independent Energy Association, and the High Plains Express.

The transmission program participates in the WGA’s State-Provincial Steering Committee that helps direct \$6 million in Recovery Act funding to focus on how best to boost renewable energy generation through transmission expansion in the Western Interconnection. The WGA works closely with the Western Electricity Coordinating Council on a \$14 million five-year Western Interconnection transmission planning exercise.

John Price, left, and Brain McDaniel, right, work on a circuit breaker that is part of the Smart Grid at the Engines Lab in Fort Collins.





Anthony Lucero rivets solar panels in place at the Greater Sandhill Solar Project being constructed by SunPower Corporation outside of Alamosa.

New Energy Finance

The GEO has built its mission around three general tenants: creating access to services, access to information, and access to finance. Improving access to finance means removing high up-front cost barriers that hinder energy efficiency upgrades or the installation of renewable energy systems. That requires developing new and innovative financial mechanisms to drive the New Energy Economy forward. With the opportunity to direct Recovery Act dollars to more projects, the GEO put greater focus on developing more financing options in program year 2010 and made impressive strides that will pay big dividends in years to come. Generally, the program breaks into two components.

Finance for Retrofits

Access to finance for this purpose of adding energy-related upgrades is often hard to find, making it difficult for customers to move forward with retrofits. Since the financial benefit of reduced energy consumption is monthly, translating the costs of implementing energy upgrades to a monthly payment fits better within a home or business budget. And, from the banker's perspective, a clear demand for this kind of loan product must be demonstrated.

As the GEO finds new way to promote finance opportunities for retrofits, the possibilities have promise. Financial

incentives will make it easier for customers to save money through improving the efficiency of their building and creating demand for financial products will also have an indirect benefit in terms of generating demand for an enlarged workforce of contractors and suppliers needed to make these improvements.

Finance for the New Energy Economy Industry

Enhancing access to finance is also critical if Colorado is to continue as a national leader in both the production of clean energy and the growth of companies that generate the products and services of the New Energy Economy. The GEO's finance program took important steps toward that end in fiscal year 2010.

- The GEO created a non-residential finance program totaling \$13 million, in partnership with the Colorado Housing Finance Authority (CHFA). This will be a two-pronged loan program in which the GEO will leverage funds from private lenders and act as a direct lender for commercial loans that promote energy efficiency and renewables on an economic development basis.
- In 2009, the State was allocated \$51 million of Qualified Energy Conservation Bonds, which are a unique municipal bond—similar to Build America Bonds—that provide very low financing rates for clean energy capital improve-

ments. The GEO conducted a competitive application to allocate \$39 million of QECBs for local projects. The bond dollars have assisted Front Range and Western Slope communities with energy efficiency retrofits of public buildings as well as installation of wind, solar and other renewable power projects. They also assisted in financing Fort Collins' Smart Grid project. Over the last six months, interest rates for QECB-funded projects have ranged between 1.00–2.8%.

Legislation

The GEO's finance program also worked closely with legislators to develop additional initiatives that give residents, state government, companies and others more financial options that ease the way for various new energy upgrades.

- Lawmakers extended the financing power of the Property Assessed Clean Energy finance program, or PACE. Legislation in 2010 expanded the reach and buying-power of the program. Senate Bill 100 allows for current county PACE programs to enter into multi-county bond transactions to enlarge the pool and improve financing rates. Even more significantly, House Bill 1328 created a statewide PACE district that will allow counties to opt-into a much bigger, more efficient financing structure.

- Senate Bill 207 allows for up to \$73 million of COP (Certificate of Participation) financing for the purpose of making state buildings more energy efficient. The funding of these state capital improvements will be repaid through guaranteed annual energy savings that will be identified for each project.
- House Bill 1342, known as the "Solar Gardens" bill, promotes a new way of investing in renewable energy. The Solar Gardens model allows for individuals to purchase shares in a large solar array and benefit directly from the system's renewable energy generation. This helps people who may rent, or live in a home that doesn't have good solar access. The solar garden approach also allows people to move and still keep the benefits of their solar investment.

ENERGY STAR financing

GEO's finance program also worked closely the ENERGY STAR Mortgage program as the GEO entered into partnerships with three large mortgage lenders to promote incentives for ENERGY STAR New Homes and home retrofits. The incentives can be used to aid the purchase of a newly built ENERGY STAR home, or to refinance an existing home mortgage in a way that allows the homeowner to make ENERGY STAR home improvements at the same time.



New Energy in our Communities

A key initiative within the Governor's Energy Office has been to build capacity at the local level for energy efficiency and conservation as well as renewable energy. Much of this effort has been carried out by the GEO's "regional representatives," who act as the face of the agency and the New Energy Economy in different geographic areas of Colorado. The regional representatives engage towns, cities and counties—as well as non-profits, local utilities and higher education institutions—across the state, working with them to adopt various GEO programs.

The work of the GEO's four regional representatives has helped communities statewide connect with rebate programs for insulation and solar energy, growing interest in ENERGY STAR New Homes, energy efficiency improvements for public and commercial buildings and myriad grant opportunities provided by the GEO.

Program year 2010 brought a major new addition to efforts at spreading the New Energy Economy in Colorado. With the announcement of the American Recovery and Reinvestment Act in mid-2009, regional representatives and other staff

conducted a listening tour around the state to determine how best to allocate Recovery Act funding provided through Energy Efficiency Conservation Block Grants (EECBG).

The U.S. Department of Energy provided EECBG funding directly to the 30 largest cities and counties in the state, two Indian tribes, and to the GEO. A minimum of 60 percent of the GEO EECBG funding was required to be directed to Colorado rural and mountain communities that were not direct-recipients of the federal dollars. The GEO chose to provide about 72 percent of its EECBG funding to rural and mountain communities.

Not only did the GEO use these dollars to provide new energy rebates and grants, but directed them toward building lasting local capacity with the creation of Community Energy Coordinators (CECs). In all, the GEO funded CEC positions in 18 regions to bring the New Energy Economy to the state's rural and mountain communities.

The CECs collaborate with local government, community groups, businesses, and utilities to build a clean energy strategy that meets the specific needs of the region served. CECs receive personalized guidance from the GEO, have access to clean energy tools and programs, and participate

in GEO monthly training and networking sessions.

Statewide, the clean energy programs of greatest interest to the communities are clean energy financing programs, including emerging programs to allow individuals to repay for energy improvements through annual property tax assessments, the Main Street Efficiency Initiative to drive energy-saving upgrades for local businesses, boosting local job creation through promoting various energy rebates and creating energy efficiency and renewable energy awareness and understanding,

The CECs jumped off to a strong start in the fiscal year, quickly emerging as community leaders and "go-to" experts for the many people in the state's rural and mountainous communities eager to bring clean energy and cost-savings home. In only their first six months, the CECs played important roles by educating their local audiences through workshops, news articles and web sites, by helping local governments develop long-term energy plans and through showing how investments in energy efficiency will lower utility bills and protect against future energy rate increases.

Chris Hibner, center, hands a solar panel to Cesha Johnson, right, on the roof of a Greenwood Village home,



Bicycle technician for the Denver Bike Sharing program, Nicholas Solaninka works on a bike in the organization's shop in Denver. The GEO provided funding to support the bike sharing program.

Greening Government

Since 2007 GEO has played an important role in helping Colorado's state agencies make progress toward Governor Ritter's goals to green state government by reducing energy and water use, waste and petroleum use. In fiscal year 2010, the Greening Government Coordinating Council (GGC)—under the direction and guidance of GEO—issued an annual report card detailing state agency accomplishments and challenges, and providing recommendations for meeting greening government goals. The report card outlined several significant achievements, including:

- **Energy:** Nearly three-quarters of all state agencies are engaged in some stage of Energy Performance Contracting that will lower utility bills and save taxpayer dollars. In four higher education institutions alone, recent projects will save \$1.6 million a year in energy costs.
- **Water:** Four state agencies that manage large buildings and facilities started conservation projects resulting in savings of nearly 1.6 billion gallons of water. Many agencies statewide are beginning similar efforts.
- **Tracking:** Nine agencies are implementing EnergyCAP, an energy tracking software purchased by the GEO. Use of the software allows consistent and accurate reporting of progress toward energy and water consumption goals.
- **Renewables:** State agencies and higher education institutions installed eight

solar energy projects, ranging in size from 5 kW to 99 kW.

- **Materials:** Colorado introduced the Environmentally Preferable Purchasing policy (EPP) to assist agencies in reducing environmental impacts. The EPP contains numerous guidelines, including using paper with recycled content.
- **Petroleum:** The state fleet has reduced petroleum consumption by 11.6 percent, nearing the goal's halfway mark. Replacing fleet vehicles with hybrids and those that run on alternative fuels has been a key factor.

On April 22, 2010, to commemorate the 40th anniversary of Earth Day, Governor Ritter issued an executive order that builds on the successes of his greening government directives as well as incorporates goals of the Climate Action Plan. As part of his Earth Day directives, Governor Ritter required that all agencies use EnergyCAP software to provide consistency and accuracy in tracking, analyzing and managing energy and water use in state buildings. This is to address the challenge involved in tracking energy improvements across such a large and diverse organization that is state government.

The Greening Government program is taking additional steps in this regard by leading an effort to report state agency greenhouse gas emissions to *The Climate Registry*, a non-profit collaboration among North American states, provinces and ter-

ritories setting consistent and transparent standards to calculate, verify and publicly report greenhouse gas emissions into a single registry. This is in keeping with the additional Earth Day directive that codifies the Climate Action Plan into greening government goals and calls on state agencies to reduce greenhouse gas emissions 20 percent below 2005 levels by 2020.

Colorado's petroleum reduction strategy earned Colorado's state fleet winning recognition from the North American Fleet Association's award for sedans and light vehicles. Winners were chosen by a panel representing equipment makers, automotive publishing companies, leasing companies and public and private fleet managers.

The Greening Government Council and the State of Colorado Purchasing Office implemented the state's first Environmentally Preferable Purchasing (EPP) policy in 2010. The EPP incorporates environmental specifications, in addition to traditional performance specifications, in a life-cycle analysis prior to product selection. On Earth Day, the EPP was amended to restrict state purchases of bottled water except in situations where water supply is unavailable, when bottled water is needed to protect safety and health, and for use in emergencies. These restrictions will assist in reduction of waste and recognizes the high water quality standards and practices followed by Colorado's public water system suppliers. In addition, the EPP was amended to include new man-

ufacturing standards for state purchases of computer electronics.

The Greening Government Council has also worked through challenges associated with state agencies deploying renewable energy. A council sub-group is working with the Office of the Attorney General to craft template contracts to provide simplistic mechanisms for using a third-party, Power Purchase Agreement for solar photovoltaic projects. This type of arrangement allows the state, a non-taxed entity, to take advantage of the federal tax incentives through partnership with a private, taxable business. The arrangement makes this a winning proposition for the state, the solar energy provider, and the utility companies that are working to increase the amount of renewable energy in their portfolios.

The employee engagement efforts of the GCC included a Transportation and Environment Fair at the Colorado History Museum in February 2010 that featured more than two dozen alternatively-fueled and new technology vehicles and showcased over 40 vendors offering green products and services. Over 400 people attended the Fair. Additionally, an electronic employee survey relating to greening government received more than 2,500 responses within the first three days. The results will be useful in designing a strategic plan targeted at encouraging employees to take greening government actions at work.



David Smith, 4, of Castle Rock hangs onto a rope as he tries to leap from fake floatable logs as his father, Jim keeps a watchful eye on him in a pool heated by a solar thermal system at Apex Recreation Center in Arvada.

Colorado Carbon Fund

In its second full year of activity, the Colorado Carbon Fund (CCF) has taken significant steps in its mission to reduce greenhouse gas emissions throughout Colorado. The CCF is the first state-based program in the country designed to help people and businesses offset their greenhouse gas emissions by directing money raised from carbon offset purchases to homegrown clean energy projects to be developed here in Colorado.

The CCF is housed inside the GEO, and has developed partnerships with local governments and businesses across the state. Funds donated to the program were put to work with the development of several projects throughout the state.

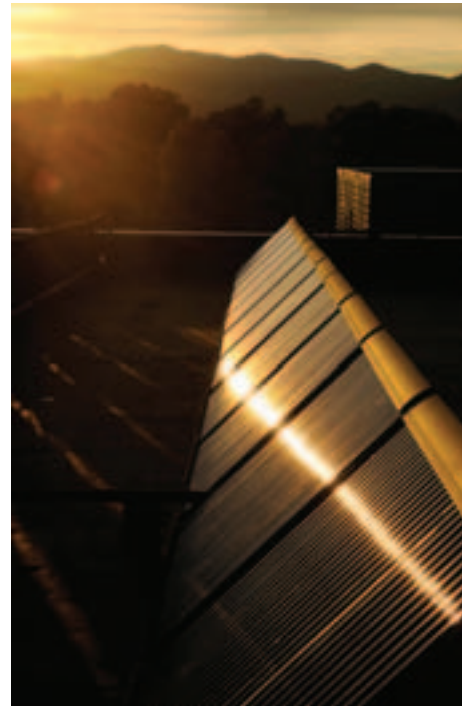
The program's first major project collects and flares methane gas collected from the Larimer County Landfill, helping mitigate the global warming potential of a highly potent greenhouse gas. Methane has a global warming potential some 20 times that of CO₂. But through combustion, methane gas is turned into less potent carbon dioxide, thus reducing the global warming effect.

The CCF also solicited its first set of grant proposals in 2010, and began the process of awarding funds to several solar-thermal projects, including \$30,000 to the

Apex Parks and Recreation Center in Arvada and \$39,000 for a system at the Maple Terrace affordable housing apartment complex, operated by the non-profit Loveland Housing Development Corporation Authority. In addition, the CCF has set aside funds to support projects in Boulder and Steamboat Springs in the upcoming fiscal year. The solar-thermal projects will reduce utility bills, save money for taxpayers, create business for local renewable energy installers, cut dependence on fossil fuels, and reduce greenhouse gas emissions in Colorado.

The CCF has also given funds to three campaigns that promote energy efficiency education in high schools and colleges around the state. The programs include the Denver Energy Challenge, the Student Renter Energy Outreach (\$CORE) Program, and the Laboratory Water & Energy Efficiency Program (LWEEP).

The CCF, through its contract with The Climate Trust, has been approached with nearly 400 projects. The most promising projects involve methane capture at sites such as coal mines or landfills. Anaerobic digester projects that capture methane from livestock waste are also possible contenders.



A solar thermal system is seen at sunset on the roof of Apex Recreation Center in Arvada. The system heats the entire complex.



A rainbow extends over a wood-to-energy system that heats the South Park Recreation Center in Fairplay, Colorado.

Major Additional Initiatives

The GEO continues to be engaged in several important projects across programs and involve many partners in the public, private and non-profit sector. Fiscal year 2010 saw significant progress with the following initiatives.

Colorado Industrial Energy Challenge

Governor Ritter's Climate Action Plan directs to the Governor's Energy Office to implement an industrial energy efficiency program that will help Colorado reach its greenhouse gas reduction goal of 20 percent by 2020 by working with the state's largest factories to reduce energy use. Major progress with this program came in program year 2010, with formal launch just weeks into the 2011 fiscal year.

The Colorado Industrial Energy Challenge is a voluntary program open to industrial facilities with more than \$200,000 in annual energy costs. To join the program, companies agree to set a five-year goal of reducing energy use, reporting total energy consumption for the base year, and in following years, to demonstrate progress. By joining the program, a company can receive free technical assistance to achieve energy reduction goals.

The charter membership included 13 Colorado companies: Amgen, Aspen Skiing Company, Avago Technologies, Crested Butte Mountain Resort, Encana, Frito-Lay, MillerCoors, New Belgium Brewing Co., Roche Colorado Corp., Rocky Mountain Bottle Company, Rocky Mountain Metal Container, Sandoz and Woodward.

The challenge is funded with a U.S. Department of Energy competitive grant awarded to GEO in 2009. The Southwest Energy Efficiency Project is leading and coordinating the program on behalf of the GEO. Colorado State University's Industrial Assessment Center will provide most of the technical assistance to partner companies.

Colorado Energy Assurance and Emergency Grant

The GEO is responsible for administering the U.S. Department of Energy's "Energy Assurance and Emergency Plan," a statewide planning program to enable Colorado to update its emergency response capabilities to confront massive power outages, natural disasters and threats such as attacks on the state's information technology infrastructure. The project is funded through a \$653,000 federal grant.

The grant has several components, all launched in program year 2010. GEO selected a vendor to conduct the emergency plan update and work with other agencies and perform inter- and intra-state exercises. Grant funds for the project were also directed toward developing an enhanced Geographic Information Systems database to allow agencies to view critical infrastructure such as power plants, major substations and high voltage transmission

lines. The Public Utilities Commission has hired a full-time engineer to perform duties related to cyber security and threat assessment planning.

The project will focus on building regional energy assurance capability to allow the State of Colorado to coordinate and communicate statewide and have critical energy infrastructure partners in the areas of energy security, grid reliability, emergency response and large-scale disruption.



A wind turbine sits in front of Jeff Blamey, left, and Derek Tamura, right, as they work at the American Zephyr office in Louisville, Colorado.



Salesman Phil Gomez shows customer Margaret Linzbach a Kenmore energy efficient dishwasher at Sears in Denver. Rebates offered by the GEO's Recharge Colorado program encouraged consumers to purchase energy-saving appliances.

Connecting to Community

The GEO dramatically expanded its communication of programs, grants, rebates and other opportunities in program year 2010. With the benefit of Recovery Act dollars, the GEO launched Recharge Colorado, a comprehensive information campaign with the rechargecolorado.com website as its centerpiece. The website set a national standard for organizing consumer information about energy-savings opportunities in a single place.

The site provides Coloradans with access to simple and accurate information about energy efficiency and renewable energy measures including what financial incentives exist to help pay for them and what service providers are nearby. Much of the information is personalized based on where the user lives, their utility provider and the age of their home. The site is also the driving force behind the GEO's Recovery Act-funded rebate program. Visitors access the site to reserve rebates for energy efficient appliances, home insulation and duct sealing and renewable energy systems. The site is supported by a call center and a sweeping communications campaign that combines paid media, grassroots partnerships, earned media and social media.

The Recharge Colorado campaign has generated enormous public interest and news media coverage. Some numbers tell the story. In its first four months, the website registered more than 166,000 visitors and an accompanying call center received more than 38,000 queries. More than 12,000 people opened "energy action plan" website accounts to guide them on making energy upgrades on their homes. Since its launch in April of the program year, Recharge Colorado has been recognized as a leading example by a number of other states including California, Texas, Wyoming and Nevada. The DOE has also highlighted Recharge Colorado as a Recovery Act success story.

The GEO also communicates New Energy Economy information and success through many other channels, including traditional news media, social media platforms such as Twitter and Facebook, electronic newsletters, public, non-profit and private sector partners, professional and industry associations, workshops, webinars and trainings. The GEO's regional representatives and the Community Energy Coordinators in 18 Colorado regions also serve as a key communications arm for the GEO, connecting with

news media in less populated regions to ensure energy-saving tips and opportunities reach all Coloradans. In program year 2010, the GEO tabulated some 700 news media articles focused on the work and policies of the GEO.

The GEO took numerous additional steps to connect Colorado citizens and business with information and opportunities tied to energy efficiency and renewable energy. They included:

- Providing \$56,500 to help sponsor 57 community events across Colorado attended by tens of thousands of people.
- Teaming with four Better Business Bureaus serving Colorado to create vendor lists that allow consumers visiting rechargecolorado.com to select contractors providing renewable energy and energy efficiency measures.
- Presenting the third annual "Governor's Excellence in Renewable Energy Awards" to honor outstanding contributions from individuals and organizations to protect Colorado's environment and provide clean power through renewable energy. The awards recognized winners in five categories:

- Individual: Terry Meikle, Colorado Springs Utilities, for advancing efforts to use woody biomass as a utility-scale power source.
- Small business: OPX Biotechnologies Inc. of Boulder for using bio-engineering technology to convert renewable crops into biofuel and other products that offset petroleum-based alternatives.
- Large business: Renewable Energy Systems Americas Inc. in Broomfield for its industry leadership in expanding the use of wind energy.
- Institutional: Poudre Valley Rural Electric Association in Larimer, Weld and Boulder counties for leading rural electric associations in integrating renewable energy.
- Non-profit: Northern Colorado Clean Energy Cluster for its work creating green and renewable energy jobs in the Northern Colorado region.



City of Boulder Hydro Manager Jake Gesner does his morning walkthrough at the Boulder Canyon Hydro facility. The facility, which was built in 1910, received money for a replacement 5 MW hydroelectric unit.

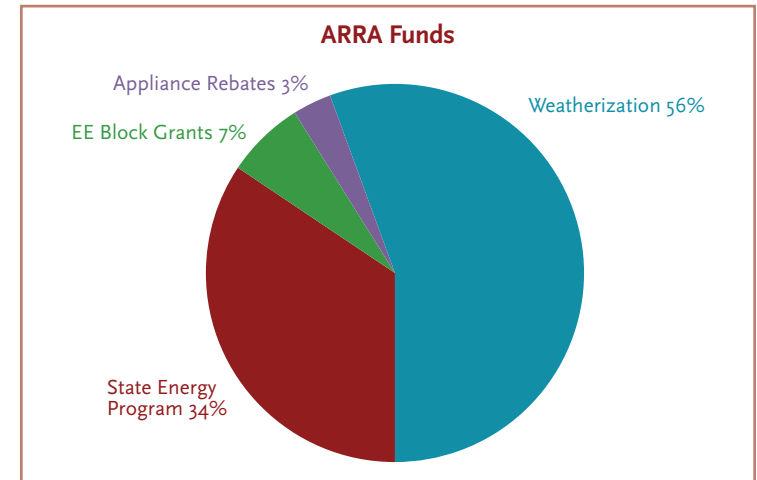
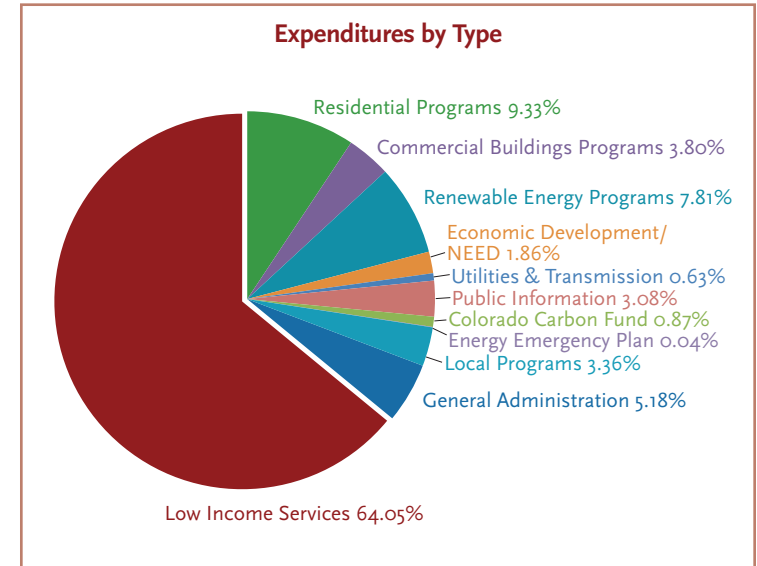
Revenues and Expenditures

The American Recovery and Reinvestment Act was passed by Congress in February of 2009. However, it wasn't until January of 2010 that the funds were approved and released following DOE and NEPA review of the State Energy Plan. As a result, revenues reflect the influx of the grant money to be spent over a period of 2–3 years, however expenditures reflect only six months of implementation (through June, 2010).

GEO Balance Sheet—SFY10

SFY 10 Revenues by Type	Amount	Notes
Weatherization Program—ARRA	\$79,531,213	Expend by 1/2012
Weatherization Program—Utility Partnerships	\$7,519,310	Expend by 6/2011
Weatherization Program—DOE, LEAP, Xcel (One Year)	\$18,752,608	
Energy Outreach Colorado—Cash Assistance Grant	\$1,625,000	
State Energy Program—ARRA	\$49,222,000	Expend by 2/2012
State Energy Program—DOE (One Year)	\$391,000	
Energy Efficiency Conservation Block Grant (ARRA)	\$9,594,800	Expend by 7/2012
State Energy Efficient Appliance Rebate Program (ARRA)	\$4,739,000	
Public Schools Fund	\$195,228	
Clean Energy Fund	\$114,160	
Partner Rebate Investment	\$1,304,250	
Penalty Fees (CDPHE/EPA)	\$1,006,138	
Interest (CEF, PSF, PVE)	\$311,644.00	
Grant Programs	\$1,553,209	
Total Revenues	\$175,859,560.25	

SFY 10 Expenditures By Program	Amount	Program Area
General Administration/Salary	\$2,781,597.42	GENERAL ADMINISTRATION
Federal Weatherization Program	\$32,799,875.26	LOW INCOME SERVICES
Low Income Cash Assistance: Energy Outreach Colorado	\$1,625,000.00	RESIDENTIAL PROGRAMS
Residential Efficiency	\$5,015,080.33	
Commercial Buildings New/Existing	\$1,490,961.63	COMMERCIAL BUILDING PROGRAMS
Public Schools Efficiency	\$142,777.50	
Industrial Program	\$98,529.72	
Greening Government	\$307,672.98	
Renewable Energy Programs	\$4,199,590.23	RENEWABLE ENERGY PROGRAMS
Economic Development (NEED Grants)	\$998,691.40	ECONOMIC DEVELOPMENT—NEED
Utilities and Transmission	\$338,230.62	UTILITIES AND TRANSMISSION
Public Information	\$1,657,955.29	PUBLIC INFORMATION
Colorado Carbon Fund	\$465,183.21	COLORADO CARBON FUND
Energy Emergency Plan	\$20,000.00	ENERGY EMERGENCY PLAN
Local Fuels	\$93,757.50	LOCAL PROGRAMS
Clean Energy Coordinators	\$548,368.50	
Grant Funded Special Projects	\$1,165,308.27	
Total Expenditures	\$53,748,579.86	

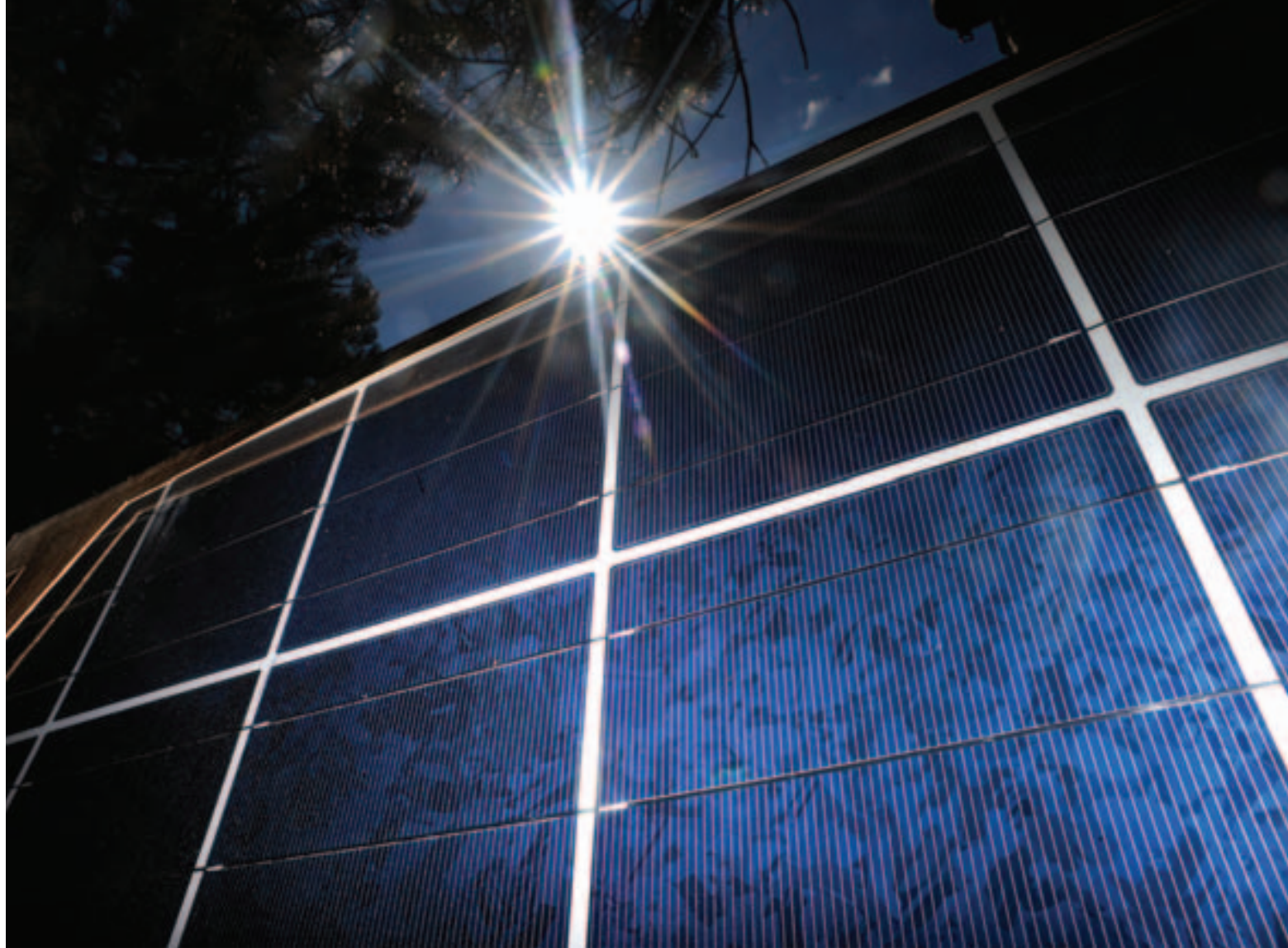


Looking Ahead

The GEO experienced the most ambitious and energetic year in the agency's history, shepherding more than \$150 million of Recovery Act funds into a rich variety of renewable energy and energy efficiency projects, sustaining and creating hundreds of jobs and helping to strengthen Colorado's still-expanding New Energy Economy.

With the administration of Governor Bill Ritter coming to a close, the GEO takes pride in its accomplishments over a fast-paced and exciting four years. But the work isn't done. Many important developments and projects are unfolding in program year 2011 and Recovery Act-funded work will continue in the year ahead.

GEO initiatives to assist projects through the Renewable Energy Development Team, ongoing distribution of rebates for residential and commercial energy upgrades, delivery of funds for major projects through GEO's newly launched revolving loan program, significant energy-saving retrofits to Colorado's industrial facilities and efficiency improvements to thousands of low-income Colorado homes are among the many efforts that will continue as the energy office moves forward under a new governor.



Colorado's New Energy Economy has inspired hundreds of companies to start-up, expand or move to our beautiful state. The GEO has been privileged to play an important role in building and expanding this New Energy Economy, and looks forward to seeing Colorado continue to lead the country toward a sustainable future of 21st century jobs, cleaner energy resources and greater energy security.

The sun rises over a solar panel during an installation by Solar City in Golden, Colorado. Solar City is new to Colorado.



Workers keep warm near a fire during a break while working at the Greater Sandhill Solar Project being constructed by SunPower Corporation outside of Alamosa.



Governor's
Energy Office



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