



# Annual Report

COLORADO ENERGY OFFICE - 2013/2014







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# LETTER FROM THE DIRECTOR

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Welcome to the Colorado Energy Office's (CEO) annual report for fiscal year 2014.

The spectrum of Colorado's energy economy is vast, from our long-standing leadership in traditional fuels to being on the cutting edge of new technologies. The mission of CEO is equally broad — promoting innovative production across the energy spectrum and efficient consumption in all sectors. The implications of this mission are equally vast — improved economic prosperity, healthier citizens and a healthier environment.

Over the past year, CEO has worked to transform Colorado's energy markets by increasing energy efficiency in homes, public buildings and agricultural facilities, advancing the adoption of alternative-fueled vehicles, and developing the diversity of the state's electric generation portfolio.

By focusing our efforts and resources on these energy markets, Colorado will reduce energy consumption, lower fuel costs, reduce emissions, develop new energy resources and spur more economic growth.

Through our statewide energy efficiency programs that target low-income households and residential and building market segments, CEO helps homeowners and businesses save valuable dollars and redirect energy savings. By expanding alternative transportation infrastructure and removing barriers to alternative fuel vehicle adoption, we will help deliver lower fuel cost options into the market, reducing emissions and promoting additional beneficial uses of Colorado's domestic energy resources.



We invite you to read our annual report to learn more about how the Colorado Energy Office is helping to transform key energy markets in the state. We are particularly proud to tell you about Colorado's nationally recognized leadership in public sector energy efficiency, federal-state/public-private collaboration in alternative fuel infrastructure development, and multi-faceted advocacy in support of emerging clean electric generation technologies.

Thanks to all our partners for their continued dedication to this work.

Thanks for your interest.


*Jeff Ackermann*

### MISSION STATEMENT

The Colorado Energy Office mission is to improve the effective use of all of Colorado's energy resources and the efficient consumption of energy in all economic sectors, through providing technical guidance, financial support, policy advocacy and public communications.

### VISION STATEMENT

The Colorado Energy Office vision is to help Coloradans live more prosperous and healthy lives by promoting innovative energy production and efficient energy consumption practices that are beneficial to the economic and environmental health of the state.



HB-1315 passed in spring of 2012, changing the mission & vision of the Colorado Energy Office. The bill enabled the office to build on Colorado's national reputation as a leader in clean energy and energy innovation, and support the renewable energy sector, as well as traditional sectors like natural gas.





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## FY13/14 Successes


- The average Home Energy Rating System (HERS) Index in Colorado decreased from 63 to 59 during the fiscal year, meaning the average new single family home is 4% more efficient than one built in June of 2013.
- CEO's Energy Performance Contracting Program (EPC) served 275 public buildings, totaling \$3,503,823 in annual utility cost savings. As of June 2014, the EPC Program ranks #3 in the nation in total investments and #5 in per capita investments.
- CEO completed the Dairy and Irrigation Energy Efficiency Pilot Program. CEO worked with eight producers to implement improvements, investing \$233,000 and leveraging \$168,000 in incentives, including utility rebates. These improvements expect to yield \$47,000 in savings each year. With incentives included, agriculture producers will see a return on their investments in 16 months. In addition, the installed projects will reduce 742,859 lbs. of greenhouse gases, (equivalent to powering 30 homes for a year).



- The total projected annual savings for implemented measures for all Energy Management Assistance Program (EMAP) K-12 partners was approximately \$72,000. The total projected costs for implemented measures was \$133,300. This resulted in an average payback of two years for implemented measures.
- Charge Ahead Colorado funded 92 electric vehicle (EV) charging stations, including 86 Level 2 chargers and 6 Level 3 fast chargers, across the state.
- The Weatherization Assistance Program delivered service to 3,177 eligible single and multifamily units throughout the state in all 64 counties. The associated installed measures total more than 490,000 therms of natural gas

and more than two million kilowatt hours of electricity saved. Per client, that equates to a 17.5% natural gas savings and a 9% electricity savings.

- CEO's Policy team supported nine bills. These bills included expanding opportunities to increase electric vehicle use, creating tax incentives to support alternative fuels, removing constraints to finance geothermal clean energy projects, streamlining the process to develop small hydroelectric systems, and creating a sales and use tax exemption to encourage the development of more biogas projects.



In summer of 2014, CEO released the "Colorado State Energy Report," providing the values and goals that guide Colorado's energy policy.

# \$41 billion

Energy jobs are integral to the health of Colorado's economy. The energy industry currently employs more than 122,000 people in Colorado, representing job growth of 56 percent since 2003, and is estimated to have produced more than \$41 billion in revenue in 2012.

**– Colorado Energy Office**



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# Residential Energy Efficiency







Residential buildings consume 23.2% of the total energy in Colorado.\* The greatest opportunity to conserve Colorado's energy is by increasing the energy efficiency of homes and buildings. By supporting the proper installation of just a few key technologies that address space heating and hot water needs, Colorado residents can often realize immediate benefits of 20%-30% reductions in their monthly utility bill, improve indoor air quality, enhance comfort and health, and increase property value.

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The Colorado Energy Office (CEO) Residential Energy Efficiency Program focuses on these essential elements by increasing awareness and offering tools for Colorado residents to reduce energy bills and consumption. Offering a suite of incentives, programs and technical assistance, the Residential program includes support for both newly constructed and existing homes:

**Green Real Estate Initiative:** More commonly known as the Green MLS (multiple listing system), this statewide initiative is designed to include energy efficiency and renewable energy upgrades into the searchable fields in the MLS that Realtors use when helping home buyers search for homes. Currently, 90% of homes in the state are listed under the MLS and include any energy upgrades done to the home.

**Colorado Energy Savings Mortgage (ESM):**

Developed from HB13-1105, CEO provides a tiered incentive program (up to \$8,000) to encourage the purchase of highly efficient homes. Homes that qualify for the ESM on average are 30% more efficient than a new home equivalent.

**Energy Codes:** The most cost effective way to ensure the long-term efficiency of a home is to ensure it meets up-to-date energy codes at the time of build. As of June 2014, 90% of new homes met the 2009 International Energy Conservation Code (IECC) standards. CEO is a leading member of the Energy Code Compliance Collaborative. The Collaborative consists of code officials, builders,

designers, and other interested stakeholders that are working together to develop, manage, and promote the energy code compliance system for Colorado.

CEO made significant inroads with the adoption of energy efficiency and renewable energy measures in residential homes. CEO successfully worked with various stakeholders in the residential homes market, including the Colorado Coalition of Appraisers and the Appraisal Institute, EnergySmart and the Residential Energy Services Network (RESNET). Most notably, CEO signed an agreement with RESNET to help identify gaps in the residential market and provide technical assistance to address those gaps.

\*EIA

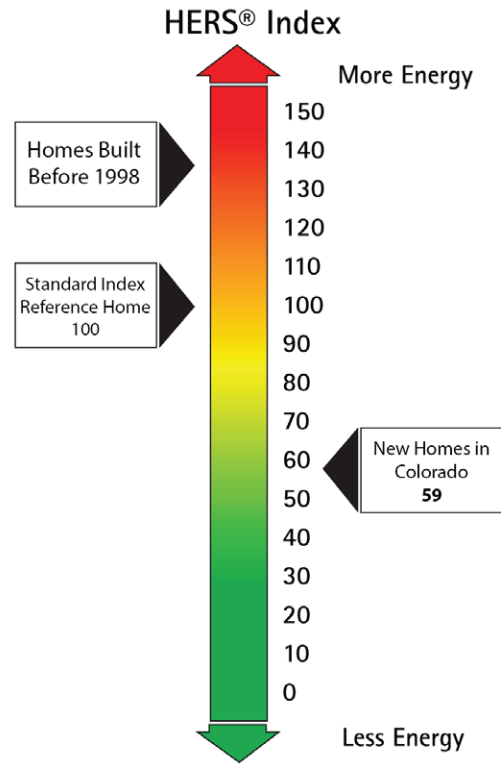
### Notable Residential Program Successes

- The average Home Energy Rating System (HERS) Index Rating in Colorado decreased from 63 to 59 during the fiscal year, meaning the average new single family home is 4% more efficient than one built in June of 2013. The average new single family home is 41% more efficient than a home built to the 2006 International Energy Conservation Code (IECC).



## RESIDENTIAL BUILDINGS

- Launched in March of 2014, 50 homeowners enrolled into the ESM program. This uptake of enrollees created an opportunity for Colorado to set a precedent for other states and influence the national guidelines on home energy incentives.
- The residential program conducted 42 training sessions to educate real estate stakeholders (code officials, builders, lenders, appraisers, Realtors, and contractors) on CEO program benefits and incentives and their impact in the home buying process. The training also gives Realtors and appraisers the incentive of continued education credits toward their respective professional licenses.
- CEO partnered with four RESNET EnergySmart home builders in the Colorado Springs area. With this partnership, home builders will provide a HERS Index Rating with every home. The HERS Index rating is the industry standard by which a home's energy efficiency is measured. Colorado Springs is the second largest building market in Colorado and approximately 10% of all new single family homes receive HERS Index rating compared to a statewide average of 50%.



The HERS Index rating is the industry standard by which a home's energy efficiency is measured. The HERS index allows a homeowner to compare the efficiency of the home to a comparable one, helping command a higher resale price.

Residential buildings consume **23.2%** of the total energy in Colorado.





# 64%

Patty Bishop's home is now 64% more efficient, saving her \$789.00 in utility costs annually.



## PROGRAM HIGHLIGHT: ENERGY SAVINGS MORTGAGE

Patty Bishop and her husband, a U.S. Veteran, closed on their new home in Ft. Collins in February. The house required many upgrades, most of which related to efficient energy consumption. Though the Bishops qualified for the Veterans Affairs Energy Efficient Mortgage incentive to help with upgrades, it was not enough.

It was not until Patty and her husband met with their real estate broker to discuss financing options to complete the needed upgrades that they found out about the Colorado Energy Savings Mortgage Incentive. The real estate broker, who had attended a Colorado Energy Office Realtor training session just a few weeks prior, was well educated on the program and able to help them get qualified quickly.

The Colorado Energy Savings Mortgage Incentive allowed the Bishops to make substantial energy upgrades to their home prior to moving in. Those upgrades included blown insulation, air and duct sealing, a new furnace, and an air cooling upgrade.

The estimated total utility savings for the Bishops is more than \$789.00 annually.

The home is now 64% more efficient than when the Bishops purchased it.



*"Everything in the house was greatly outdated, and we were wasting lots of energy. Our goal was to use less and pay less. We hope to see a reduction of 40% on our energy bills. Our home is also more comfortable, with more even temperatures. We were really excited Colorado had so many financial incentives for energy efficiency, like the ESM. Without that help, we wouldn't have been able to make these improvements all at the same time. And we would have drained our savings doing it." – Patty Bishop*



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# Energy Performance Contracting







## ENERGY PERFORMANCE CONTRACTING

Since 1995, the Colorado Energy Office’s (CEO) Energy Performance Contracting (EPC) Program has been a valuable tool that 142 state agencies, schools, colleges and universities, and local governments have leveraged to finance energy efficiency improvements in public facilities. These cost-effective business decisions redirect taxes, tuition and fees to other valued programs and services.

Through Colorado’s EPC program, any public jurisdiction is able to contract with one of the CEO’s pre-qualified energy services company (ESCO) for an investment-grade audit of its schools, libraries, jails, health care centers, veterans housing, pools, ball fields or other public facility. Under an energy performance contract, an ESCO will guarantee the energy and water savings identified in its audit, helping its client take the project proposal to the bank to finance the capital improvements identified. Valuable taxpayer dollars are then redirected from monthly utility bill payments into energy efficient lighting, HVAC systems, boilers, controls and water fixtures that further increase the savings and improve the functionality and comfort levels of public buildings.

### FY13/14 EPC Savings Breakdown

Total Investments	\$52,070,937
Buildings	275
Annual Utility Costs Saved	\$3,503,823
Electricity (kWh) Saved	19,905,595
Natural Gas & Propane Saved (therms)	3,189,808
Water Saved (kgal)	27,252

### Notable EPC Successes

- As of June of 2014, Colorado’s EPC project investments total \$447.4 million, or \$88.96 per Coloradan. These results rank Colorado #3 in total investments and #5 in per capita investments, according to the Energy Services Coalition’s national Race to the Top. Additionally, EPC projects can be found in communities across 75% of Colorado’s counties, guaranteeing more than \$28 million in annual utility cost savings.

# \$28 million

in guaranteed annual utility cost savings across 75% of Colorado counties.



## PROGRAM HIGHLIGHT: TRINIDAD SCHOOL DISTRICT 1

Trinidad School District 1 is comprised of four schools: Eckhart Elementary, Fisher's Peak Elementary, Trinidad Middle School, and Trinidad High School. Located in a remote area in the southern part of the state, the school district was in dire need of energy upgrades for all of its major buildings. Committed to minimizing energy consumption and increasing comfort and efficiency in their existing buildings, the Trinidad School District sought out the Colorado Energy Office's Energy Performance Contracting Program.

*"Our advice to other school districts is to look at successful energy performance contracting projects like ours. We needed to control our overhead costs and gain some operational economies. We felt very fortunate to have worked with our selected energy services company. Its level of professionalism was beyond reproach. Its management was first rate. The project team stayed on track and delivered our project ahead of schedule and on budget."*  
-William Cordova, Business Manager

### Facilities Improved

- One high school, plus a gym building
- One middle school
- Two elementary schools
- Administration building



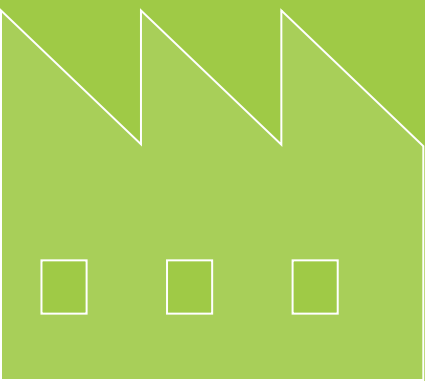
### Trinidad School District 1 Annual Savings Breakdown

Electricity (kWh) Savings	465,050
Natural Gas (therms) Savings	23,090
Utility Cost Savings	\$90,061
Operation & Maintenance Cost Savings	\$22,440
Natural Gas & Propane Savings (therms)	3,189,808

### Facility Improvement Measures

- Lighting upgrades in every building
- Insulation and other weatherization measures
- Retro-commissioning
- Air handling units balancing
- Roof top unit scheduling
- Computer power management software
- Security systems in all school buildings
- Relocation services

Trinidad School District is now experiencing  
28% annual electricity savings and  
15% annual natural gas savings.







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# Dairy & Irrigation Energy Efficiency







The agricultural industry in Colorado generates more than \$7 billion in economic output annually.\* Committed to improving energy efficiency in one of Colorado's key industries, the Colorado Energy Office (CEO) launched the Colorado Dairy and Irrigation Efficiency Pilot Program to help make achieving energy efficiency easier for Colorado dairy producers and producers with powered irrigation.

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In 2013, CEO commissioned the Agricultural Energy Market Research Report in an effort to better understand opportunities for greater energy efficiency in Colorado's agricultural sector. The study found that Colorado's \$7.3 billion agriculture industry expends more than \$400 million annually on energy, which accounts for seven percent of the industry's overall expenses. The report further states that the dairy and irrigation sectors represent the greatest potential for savings as irrigation was responsible for 50% of the total electric expenses in 2008 for Colorado's agricultural sector and dairies. While fewer in number, dairies are very energy intensive and operate 24 hours per day, seven days per week, 365 days per year. CEO's internal research found that while there are numerous resources available to agriculture producers interested in energy efficiency, they are not always well marketed or coordinated, and there is frequently a high barrier to entry.

In spring of 2014, working with a broad group of government, industry, and utility partners, CEO launched a pilot project designed to address the barriers that prevent producers from investing in energy efficiency. By bringing existing resources and partners together and leveraging new funding, CEO created a turnkey approach for the agricultural community. Through a third-party technical contractor, CEO provided free energy audits and technical support to 12 agricultural producers.

As part of the pilot project, CEO issued grants up to \$25,000 each to producers interested in implementing recommended energy improvements. Eight producers implemented improvements, investing \$233,000 and leveraging \$168,000 in incentives including utility rebates. These improvements are projected to yield \$47,000 in savings each year. CEO will build on the success of the pilot project and launch a statewide program in 2015 that will be available to all Colorado dairies and producers with powered irrigation.

### **Notable Dairy & Irrigation Program Successes**

- CEO conducted a successful pilot project that can be replicated. In the statewide program to be launched in 2015, CEO will continue to provide energy audits and technical assistance to producers and assist them in applying for project funding through USDA, utility rebates and other sources.

\*Colorado Dept. of Agriculture



# DAIRY & IRRIGATION ENERGY EFFICIENCY PILOT ANALYSIS

During the pilot phase of the program, energy audits were conducted for 12 producers. Eight dairy producers installed efficiency measures. These included new lighting, water heaters, heat recovery systems, radiant heating, and other energy efficient equipment. The installed measures will save over 260,000 kWh of electricity, 10,000 ccf of natural gas, and 9,500 gallons of propane annually. In addition, the installed projects will reduce 742, 859 lbs. of greenhouse gases, (equivalent to powering 30 homes for a year).

CEO engaged a broad group of industry partners to help design its pilot. Each partner represented an important constituency in Colorado's agricultural sector and helped bring extensive knowledge, credibility, and long-standing producer relationships to the pilot. These partners included the Colorado Department of Agriculture, the U.S. Department of Agriculture (Natural Resources Conservation Services and Rural Development), Colorado State University Extension, Colorado Rural Electric Association and member co-ops, Tri-State Generation and Transmission, and industry trade groups including the Western Dairy Association and Innovation Center at U.S. Dairy.

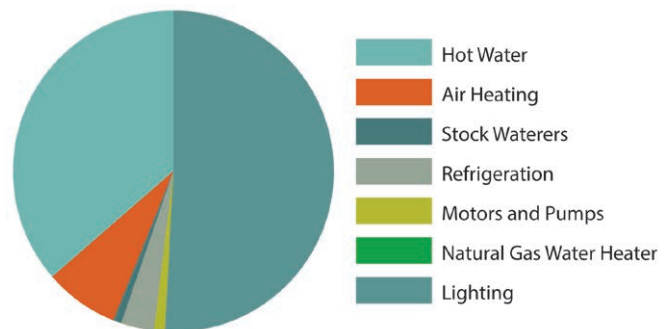
The benefit of this pilot was that it provided producers with the support needed to achieve greater energy efficiency. CEO's technical contractor worked with each of the producers to ensure they had the necessary information to make cost effective investments, assisted in identifying and applying for funding, and verified that equipment was installed as recommended. By doing much of the legwork, CEO's contractor reduced the level of effort required by the farmer that would otherwise be spent navigating the process of identifying, funding, and completing improvements.

\*4 irrigators participated in the program, but were unable to implement improvements during their growing season.

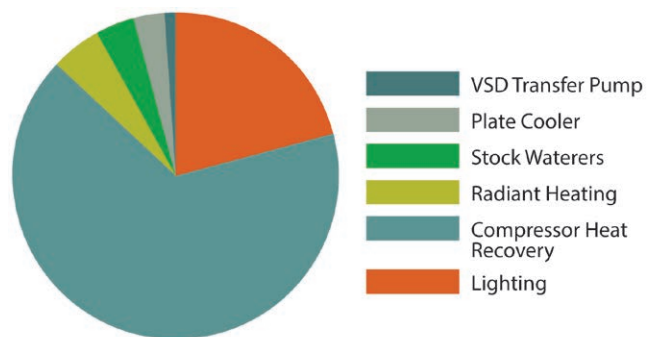
## FY13/14 EPC Savings Breakdown

Total Investments	\$60,640,460
Buildings	275
Annual Utility Cots	\$3,503,823
Electricity (kWh)	19,905,595
Natural Gas & Propane Saved (Therms)	3,189,808
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## Dairy Audit Energy Savings by Recommendation (MMBtu)



## Installed Dairy Energy Savings (MMBtu)





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# Energy Management Assistance Program





## ENERGY MANAGEMENT ASSISTANCE PROGRAM

The Energy Management Assistance Program (EMAP) is an energy management program designed to provide free technical and programmatic assistance to help Colorado K-12 schools reduce energy use and costs.

Through EMAP, the Colorado Energy Office (CEO) successfully establishes and maintains partnerships with school districts that allow for the development of a customized energy program or support for the enhancement of an existing energy program. While the primary intent of the program is to save money, school districts also see improvements in equipment reliability, lower operation and maintenance costs, better occupant comfort and increased energy awareness.

Through on-going energy efficiency conversations, EMAP partners have the potential to establish long-term relationships with local organizations that will continue to support their efforts through rebates, incentives and other support programs after their EMAP program is complete.

### EMAP Savings Breakdown

EMAP experienced a high level of success because it is designed, managed and carried out by the participating school within its own time line. This effective working partnership ensures a successful building improvement and energy reduction/management program.

### Notable EMAP Successes

- Through EMAP, CEO has been able to help 8 local government agencies and 11 school districts improve energy efficiency and implement a robust and long-term energy management program.
- Total projected annual savings for implemented measures for all EMAP partners was approximately \$72,000.
- Total projected costs for implemented measures for all EMAP partners was \$133,300. The average payback was two years for implemented measures.
- Total projected annual environmental savings for implemented measures for all EMAP partners was approximately 1,118,400 kWh and 3,600 therms, resulting in a greenhouse gas reduction of approximately 791 metric tons CO<sub>2</sub>e tons.



**3,600 therms**  
of natural gas saved



**1,118,400**  
kWhs of electricity  
saved



**791**  
metric tons of CO<sub>2</sub>  
emissions reduced  
(equivalent to powering  
109 homes for a year)



**\$72,000**  
of savings annually



## PROGRAM HIGHLIGHT: ST. VRAIN VALLEY SCHOOL DISTRICT

St. Vrain Valley school district (SVVSD) participated in an energy competition hosted by the Center for Resource Conservation's ReNew Our Schools (ROS) Program. The ROS program was designed to help encourage energy reductions through behavior change and low-cost improvements at individual schools. Participating schools received free mentorship from CEO through EMAP. The efforts of individual teachers and staff from 13 schools helped to save the district more than 250,000 kWh and reduce energy use up to 40 kWh per student.

Participating schools received free energy assessments that highlighted several opportunities for savings. CEO worked with each teacher to identify behavior change opportunities and draft an implementation strategy. Winning schools received \$25,000 to put towards non-behavioral opportunities identified through the energy assessment and/or conversations with staff. CEO worked with six schools and offered energy efficiency mentorship to each winning school.

Several inefficiencies were identified that were improved by simple changes in practice and/or behavior. Many of the schools had received a recent conversion to energy efficient lighting and newer schools had adequate daylighting; however, several schools could reduce lighting electricity by improving lighting scheduling, using dual switching and taking advantage of natural daylight. To further improve lighting levels, certain hallways had the opportunity to be de-lamped and/or be equipped with solar tubes.

Many plug loads were kept on during unoccupied hours including computers and associated equipment, space heaters and electronic music equipment. Teachers and staff were advised to turn off all equipment after hours. It was recommended to limit the



use of other energy using equipment such as bathroom hand dryers, refrigerated water fountains and copiers and printers.

The benefits of these improvements will not only save energy, but will reduce maintenance costs, optimize lighting levels, increase teacher, staff and student energy literacy, improve ownership of usage, enhance the learning environment, and integrate energy efficiency best practices into facility and custodial management of the building. Through increased energy awareness, teachers, staff and students are empowered to make better decisions around energy use, making it likely these practices will continue to impact future classes of students.

Due to the success of the program and the realized savings, the school district hosted the ROS program again in the fall of 2013.

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**Dara Ward, Energy and Sustainability Manager for the district, expressed her delight with the results of the energy competition and the mentorship provided by CEO, "The students and community at large have greatly benefited from this experience."**



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# Transportation Fuels





## TRANSPORTATION

Colorado's transportation sector consumes 28.5% of the state's energy use.\* The Colorado Energy Office (CEO) Transportation Programs promotes the adoption of alternative fuels to use Colorado's natural resources, lower fuel costs, reduce air pollutants and emissions, and drive an innovative market for clean technology.

The Colorado Energy Office (CEO) is working with industry partners to remove barriers to statewide alternative vehicle transportation by expanding fueling and charging station infrastructure and promoting incentives to lease/purchase alternative-fueled vehicles. The CEO transportation program is comprised of three sub programs; Charge Ahead Colorado, Refuel Colorado, and ALT Fuels Colorado,

In 2013, the Colorado Energy Office and the Regional Air Quality Council formed a partnership to create Charge Ahead Colorado. This effort has received the support of the Colorado state legislature, which established a fund to support CEO grants. Charge Ahead Colorado directly contributes to CEO's effort to continue the upward trend of innovation and diversification of transportation fuels in Colorado. The program is designed to alleviate "range anxiety" by expanding electric vehicle (EV) charging infrastructure, in many cases helping municipalities install their first public charging station, and allowing consumers to take full advantage of the benefits of EVs.

Refuel Colorado is a Department of Energy (DOE) funded program designed to provide fleet coaching and consumer education on alternative fuels and alternative fuel vehicles. Refuel Colorado Fleets rolled out in July 2013 as a pilot project to accelerate the use of alternative vehicles in public and private fleets. Local community-based, nonprofit energy coaches helped business and government fleet owners work together with auto dealers, fuel providers, business leaders and local governments in nine counties to pursue or expand the use of alternative fuels.

The Refuel Colorado website ([www.RefuelColorado.com](http://www.RefuelColorado.com)) was launched in the

fall of 2013, serving as an online one-stop shop for consumers. The website walks consumers through the benefits, savings, model availability, fueling locations and performance measures of six alternative fuel vehicle types. The Refuel Colorado website also provides consumers with interactive financial calculators and vehicle comparison guides, making the site a comprehensive one-stop shop for all questions on alternative fueled vehicles in Colorado.

\*EIA

### Notable Transportation Successes

- Charge Ahead Colorado funded 92 stations, including 86 Level 2 chargers and 6 Level 3 fast chargers. Through these and other efforts, Colorado now boasts more than 170 publicly available charging stations.
- CEO launched the ALT Fuels Colorado program in June 2014, aimed at expanding options for compressed natural gas-powered vehicles and fueling stations statewide. At the time, Colorado had only 18 publicly accessible compressed natural gas (CNG) fueling stations, many of which were located within the Denver Metro and Front Range areas. Over the course of four years, between 2014 and 2017, the program will add between 20 and 30 additional publicly available CNG stations along major transportation corridors, in turn, removing barriers to intrastate natural gas vehicle (NGV) travel.
- The Refuel Colorado Fleets coaches engaged 200 fleets in energy coaching and conducted 50 outreach events. Those efforts have resulted in 22 letters of interest from fleets as well as 32 Alternative Fuel Vehicle (AFV) purchases.





## PROGRAM HIGHLIGHT: CHARGE AHEAD COLORADO


The city of Fort Collins area was selected through a national search process by the Electrification Coalition, a non-profit EV advocacy organization, to be the focus of a model "EV Deployment Community" initiative. The EV Deployment Community model seeks to collectively engage all actors in the EV ecosystem to develop and demonstrate scalable and replicable best practices for supporting widespread EV adoption. As a result, the City of Fort Collins began developing a local EV Community Readiness work program. This program included work to update the city's policies and permitting processes to better support adoption of EVs within the Fort Collins community. In 2013, funding provided through CEO's Charge Ahead Colorado program was used to establish a public use EV charging station pilot program.

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"Charge Ahead Colorado's support for our EV charging station project has been extremely important," said Tom Vosburg, project manager for the Fort Collins program. "The grant enabled us to leverage a donation by Nissan and install the first Level III DC fast charger in the State of Colorado."

By recharging cars in 20 to 30 minutes, Level III charging is a game changing technology that is making regional EV travel a practical reality.

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Charge Ahead Colorado funded 92 EV stations, including 86 Level 2 chargers and 6 Level 3 fast chargers.





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# Weatherization







## WEATHERIZATION

Low-income households carry a greater energy burden than other households, often spending 10 to 15 percent of household income on energy compared to a statewide average of 3-5 percent.

The Colorado Energy Office's (CEO) Low-Income Weatherization Assistance Program provides energy efficiency retrofit services to income qualified clients (<200% Federal Poverty Level) in all 64 counties of Colorado. The program has been in operation since 1977. Through a sub-grantee network of seven regional agencies serving single family structures and one statewide agency serving multi-family structures, the program installs cost-effective weatherization measures to save clients money on their utility bills and reduce their reliance of on cash assistance for home heating. Through leveraging of state, federal and utility revenue sources, the program is able to offer approximately \$15 to \$18 million in services annually, while maintaining administrative costs below 5%. On average, installed weatherization measures provide savings of 155 therms and 636 kilowatt-hours (kWh) per home per year, which reduce annual utility bills between \$200 to \$500 for weatherization clients.

In partnership with local service providers, the program provides residents with the ability to achieve long-term energy reductions, save money on their utility bills, and improve the comfort and safety of their homes. The CEO Weatherization Assistance Program delivers service through a network of eight partner agencies. These agencies include Northeast Colorado Association of Local Governments (NECALG), Pueblo County Department of Housing and Human Services, Housing Resources of Western Colorado (HRWC),

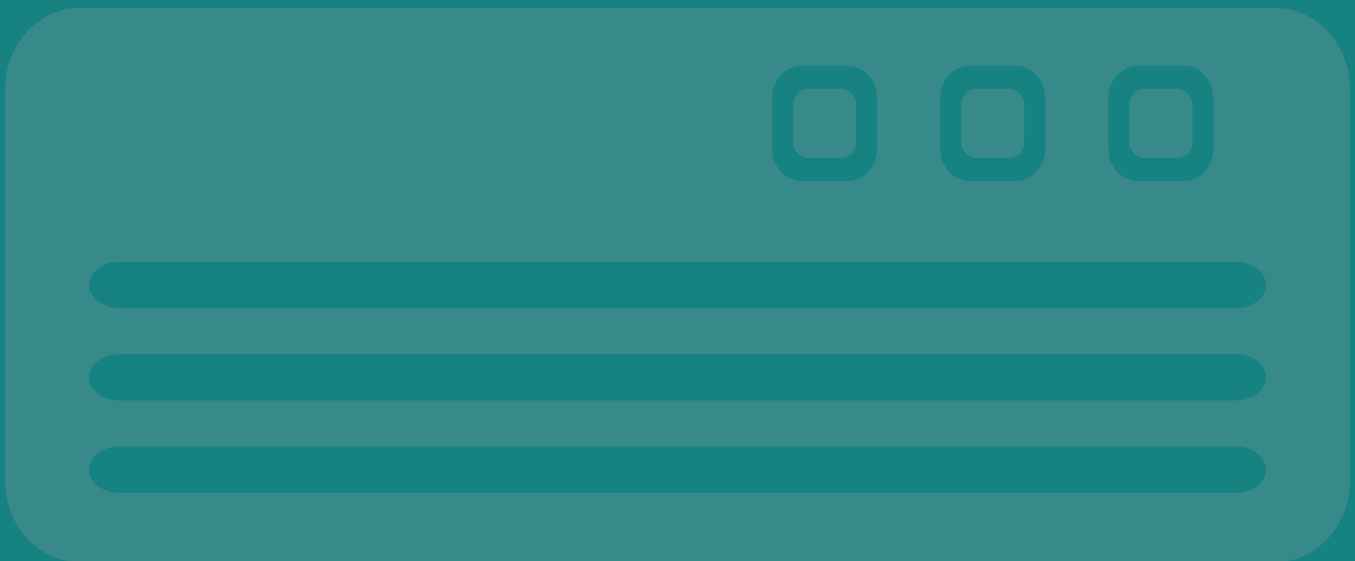
Northwest Colorado Council of Governments (NWCCOG), Boulder County Housing Authority's Longs Peak Energy Conservation (LPEC), Arapahoe County Weatherization Division, Energy Resource Center (ERC), and Energy Outreach Colorado (EOC).

### Notable Weatherization Successes

- In 2013-14, the Weatherization Assistance Program delivered service to 3,177 eligible single and multifamily units throughout the state. The associated installed measures saved clients more than 490,000 therms of natural gas and over 2 million kilowatt hours of electricity. A snapshot of the measures include:

#### FY13/14 Weatherization Measures

Furnaces Replaced	897
Furnaces Repaired	656
Water Heaters Replaced	211
Water Heaters Replaced	297
Refrigerators Installed	1,083
Low-Flow Showerheads Installed	1,629
CFL Light bulbs Installed	32,433



3,177

homes were weatherized affecting over  
6,980 individuals in all 64 counties.





## PROGRAM HIGHLIGHT: NONA TRITES

Nona Trites has lived in her 1954 Wheat Ridge home for 46 years. She has relied on the original furnace that came with the home.

"The furnace was probably 50 years old. It was a good furnace – but very noisy, and went on all the time to keep the temperature up," she says. That caused her energy bills to be higher than they would be if she'd had a more energy efficient system.

Weatherizing her home – and especially getting a new furnace – was something Nona and her husband had thought about over the years. But the upgrades were just too costly. At 86, Nona is living on Social Security, and has spent a considerable amount of money on hospital and nursing home bills for her husband over the last year. She paid a little bit at a time to pay off those bills – but with little savings, it was a financial challenge.

When Nona discovered that the Colorado Energy Office Weatherization Assistance Program could provide home performance upgrades at no cost, she gladly accepted. "I said 'I sure did need it.' We had no resources at all to pay for things that needed to get done," she says.

Nona automatically qualified for the free weatherization services because she is a customer of LEAP, the Low-Income Energy Assistance Program. She estimates that her previous winter energy bills were reaching almost \$280 per month. The costs were lowered with help from LEAP, but now, she looks forward to paying even less.

Energy Resource Center (ERC), a CEO weatherization partner agency, did the work to Nona's house. ERC's weatherization crew installed new insulation, which will keep the house warmer in the winter. Nona has also felt the benefits through the high temperatures of



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**"This new furnace will be much more economical. I'm sure it will reduce the bills," she says. And then, there is the improved noise factor. "Every time my old furnace went on, a metal plate inside caused a loud bang. Now it doesn't make any noise. It is a big relief – and my children will be relieved when they visit."**

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summer's last days. "Yesterday it was so warm out, but the insulation kept it so cool in here. I didn't even have my portable air conditioner on," she muses.

As part of the free package, Nona received carbon monoxide and smoke detectors and CFL light bulbs throughout the house along with an energy efficient refrigerator.

From laying tarp on her stairs to protect against the mess, to explaining what they were doing as they worked, the weatherization crew was welcomed by Nona. "They went right to work. They did such a nice job, and all of the men were so courteous," she says.





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# Policy & Legislative Summary







## POLICY & LEGISLATIVE SUMMARY

Legislation that promotes innovative energy production and efficient energy consumption practices can impact the state significantly as a whole and can be beneficial to the economic and environmental health of the state.

When the Colorado General Assembly introduces legislation that impacts Colorado's diverse energy economy, the Colorado Energy Office (CEO) engages with stakeholders and legislators to provide technical guidance and analysis.

During the 2014 legislative session, CEO monitored and analyzed a total of 19 bills, supporting nine bills and opposing five without testimony. These bills included expanding opportunities to increase electric vehicle use, creating tax incentives to support alternative fuels, removing constraints to financing geothermal clean energy projects, streamlining the process to develop small hydroelectric systems, and creating a sales and use tax exemption to encourage the development of more biogas projects.

The following bills highlight the work that CEO provided through technical guidance, analysis and policy support.

### Notable Policy & Legislative Successes

- **The “Expand Electric Vehicle Charging Station Grants” bill (SB14-028)** expands the list of eligible entities that may receive grants from the Electric Vehicle Grant Fund (grant fund) to include private nonprofit and for-profit corporations, state agencies, public universities, and public transit agencies. As the administrator of the grant fund, CEO will prioritize grant applications based on the extent to it will encourage the acquisition of additional electric vehicles. These grants will incentivize the build out of charging stations throughout the state to help promote the adoption of EVs.
- **The “Tax Incentives for Alternative Fuel Trucks” bill (HB14-1326)** provides tax incentives for trucks running on alternative fuels, addressing a key sector of the transportation industry. Through this bill, heavy duty trucks will qualify for up to \$20,000 in tax credits, medium duty trucks will qualify for up to \$15,000, and light duty trucks will qualify for up to \$7,500. The alternative fuels supported by this bill – natural gas, electricity, propane, and hydrogen – are produced largely in Colorado, have strong environmental benefits, and offer significant fuel cost savings.
- **The “Clean Energy Project Private Activity Bonds” bill (HB14-1222)** provides counties with additional flexibility in the financing of geothermal clean energy projects. By reducing the minimum threshold for bond issuance, the bill increases the eligibility of smaller projects, and is likely to increase interest in the use of this financing mechanism.
- **The “Hydroelectric Generation Incentive” bill (HB14-1030)** facilitates the development of small hydropower systems by designating CEO as the state agency charged with coordinating the state review and comment process as part of the federal licensing process. By coordinating comments from five state agencies, CEO will help the review process in a timely manner.
- **The “Biogas System Components Sales & Use Tax Exemption” bill (HB14-1159)** creates a sales and use tax exemption for equipment used to capture biogas or for equipment used to turn biogas into electricity. Biogas is created through anaerobic digestion, a natural process that breaks down waste like manure, food, and other organic compounds. Without capturing the biogas, the organic matter would break down and emit pollutants into the atmosphere or leach into the soil. In many cases, the byproducts of the anaerobic digestion process can be used as fertilizer, further benefiting the environment.




## PROGRAM HIGHLIGHT: HEARTLAND BIOGAS PROJECT

The Heartland Biogas Project in La Salle, Colorado uses manure from two large local dairies and food waste from the Denver metro area to produce up to 4,700 MMBtu of biogas daily. The raw biogas is processed into pipeline-quality, renewable natural gas, which can be used to heat homes, generate electricity, or fuel natural gas vehicles. The waste conversion process reduces emissions to the environment, including significant amounts of methane. Additionally, the digester facility produces organic compost amendment and liquid soil amendment products.

Given the economic and environmental benefits of the project, CEO helped the project developers through the Office's Permitting Assistance Program, and supported legislation to expand Colorado's renewable energy sales tax exemption to include equipment for anaerobic digesters.

Due to the nature of converting waste to energy and generating pipeline gas, biogas projects face significant permitting and financial barriers when being developed. Through the permitting assistance efforts, CEO was able to organize and convene meetings between the project developer and regulators from the Colorado Department of Public Health and Environment. Those meetings provided clarity to the regulatory processes and led to efficient permitting of the project.

CEO also helped the project overcome a financial barrier of the large, upfront capital cost of the project. CEO worked with the project developers, legislators, and stakeholders to develop and pass House Bill 14-1159, which provides a sales tax exemption for equipment used in developing renewable energy projects. This expanded sales tax exemption helps to address a market barrier and encourages the development of more biogas projects in rural parts of Colorado.



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