



Our Mission

The Colorado Energy Office's mission is to deliver cost effective energy services and advance innovative energy solutions for the benefit of all Coloradans.

Our Vision

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.

To achieve that mission and vision, CEO develops and delivers direct energy services and programs, and conducts outreach with energy stakeholders and communities to inform programming and policy recommendations to the administration. CEO is a non-regulatory department within the Governor's office.

Over the last century, Colorado's energy sector has grown to include a diverse range of fossil fuels, renewable energy, energy efficiency, alternative fuel vehicles, and advanced technologies. Colorado consistently ranks in the top 10 nationally for installed wind capacity and 12th for installed solar capacity as of Q2 2018. The state holds nearly 4% of the nation's proven crude oil reserves, has the sixth largest natural gas reserves in the country, and is a top 10 leading state for oil and gas production.

Fostering and maintaining a diverse energy portfolio contributes to Colorado's economic health by stimulating local business development and keeping long-term consumer energy costs low. CEO works to make energy accessible and affordable for Colorado citizens while reducing emissions, supporting the economy, and advancing innovation. Across consumer and energy sectors, CEO works to identify opportunities to increase efficiency, lower costs, reduce emissions, and fill gaps in the private sector. Energy efficiency is an integral component of the state's economic health. Inefficient energy usage is a drain on business and household resources, diminishing profitability and quality of life, particularly for the economically disadvantaged.

Colorado's buildings and facilities account for 72% of the state's total energy consumption and 21% of energy related CO2 emissions, according to U.S. Energy Information Administration. CEO develops programming to provide comprehensive energy services across residential, commercial and industrial sectors aimed at maximizing energy cost savings to customers and increasing consumer access to energy efficiency and renewable energy improvements. These programs include services such as energy audits for agricultural producers, technical and engineering assistance for public jurisdictions, financing products for commercial building owners, low income home weatherization, and strategic energy management programs for industrial entities.

As lower-emission energy resource options enter the market, the air quality of the state improves, directly benefiting the health of Colorado's residents. For example, replacing petroleum-based vehicles with compressed natural gas or electric vehicles can yield significant environmental and economic benefits for the state.



Transportation accounts for 28% of energy consumption in Colorado and 30% of energy related CO₂ emissions. CEO works to increase alternative fuel vehicles in the state through policy and planning, infrastructure grant funding, and education and outreach to consumers.

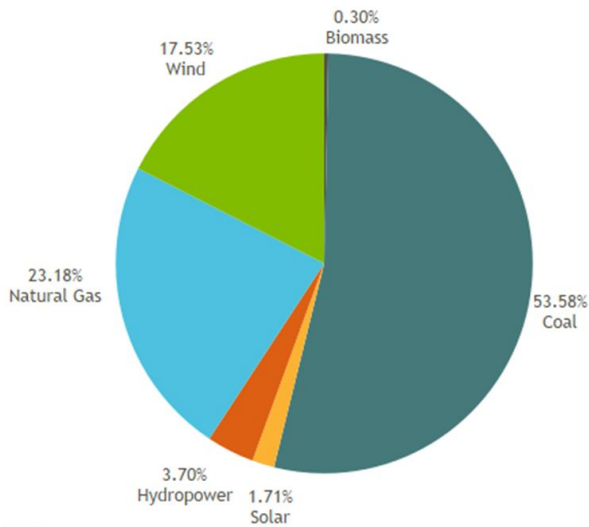
Electric power production accounts for the remaining 49% of energy related CO₂ emissions. To advance innovative solutions for electricity and mineral production beyond reducing consumption, CEO develops strategic partnerships with stakeholders in all energy industries, conducts research and feasibility studies to identify opportunities and market barriers in Colorado, provides education and information to the public, intervenes in proceedings at the Public Utilities Commission, and represents the office at the General Assembly.

As Colorado's population grows from 5 million to an expected 8.1 million by 2040, energy demand and consumption will continue to grow. By capitalizing on Colorado's diverse energy resources, innovative technology transfer institutions, and long-standing energy efficiency programs, CEO provides services that benefit all Coloradans.

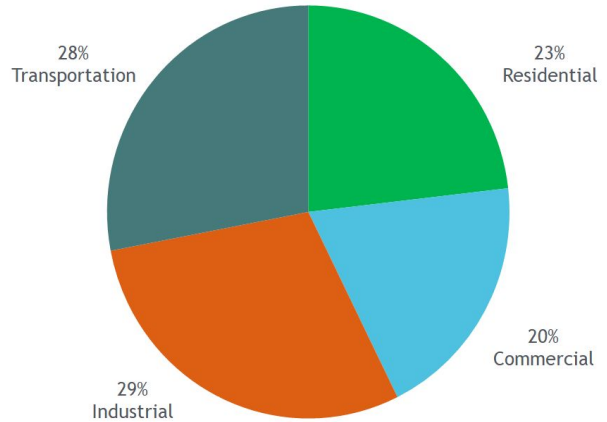


State Energy Profile Overview

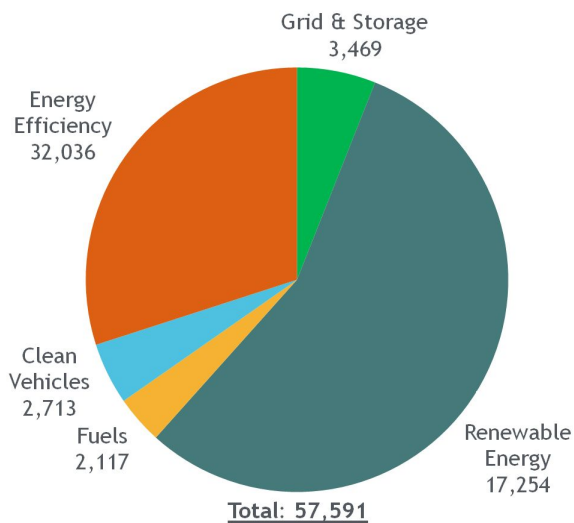
Electricity Generation by Source - 2017



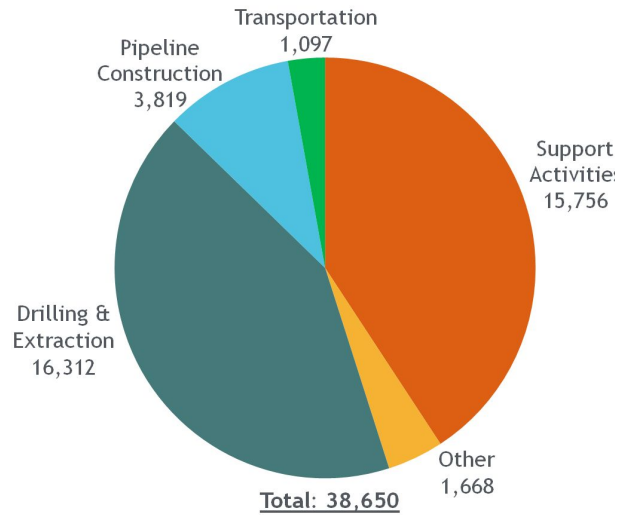
Electricity Consumption by Sector - 2016



Cleantech Jobs - 2018



Oil & Gas Jobs - 2014

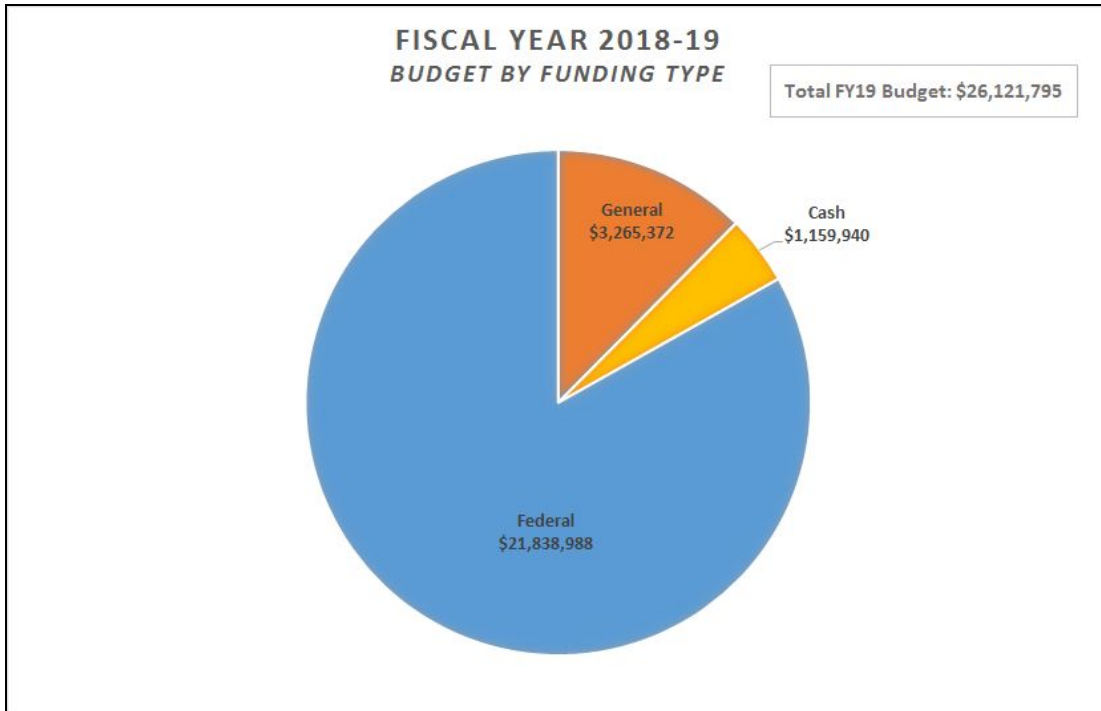




Statutory Authority

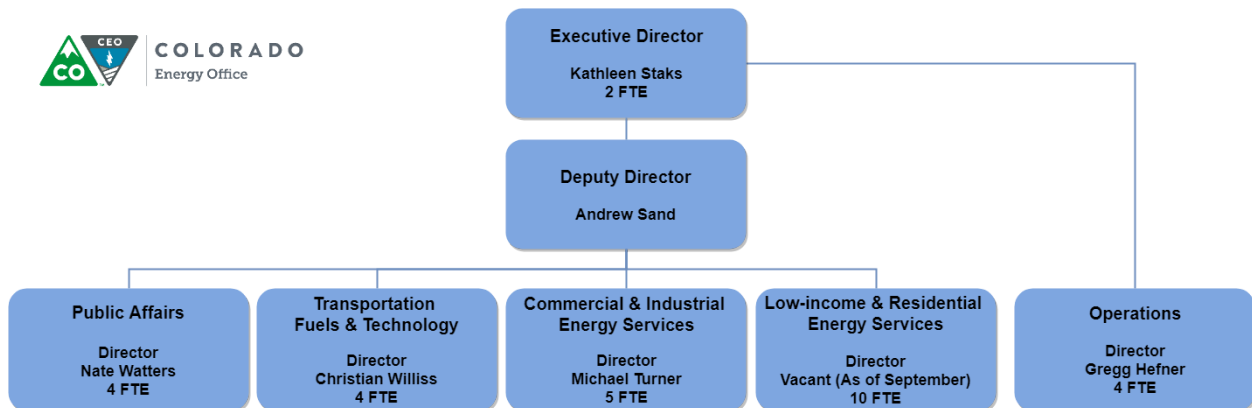
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FY2018-19 Budget



Organizational Structure

During FY2017-18, CEO conducted a thorough restructuring process in order to more effectively align its program offerings and services with its various customer segments. The chart below provides a snapshot of the office’s program areas, functions, and FTE for FY2018-19.





The Public Affairs Unit manages the office's strategic communications and outreach efforts, conducts research, and implements the office's policy and regulatory work in support of CEO's mission. This Unit is responsible for the office's work on utility scale electricity generation, transmission, and energy production issues. The Public Affairs Unit works closely with all of CEO's units to implement each unit's strategic policy and communications needs. To most effectively deliver these services and develop informed policy strategies and recommendations, the Unit engages and develops strategic partnerships with stakeholders in all energy industries.

The Transportation Fuels & Technology Unit works to reduce transportation-related emissions by accelerating the use of market-ready and emerging alternative transportation fuels and technologies that can meet the needs of today's fleets and motoring public but for which barriers exist. Transportation accounts for 30% of total greenhouse gas emissions in Colorado. To help lower emissions in this sector and promote energy independence, CEO provides a number of grant programs that reduce the cost of installing alternative fuel vehicle fueling and charging stations. This infrastructure helps reduce range anxiety, one of the major barriers to adopting new transportation technologies by fleets and the motoring public. CEO's Transportation Fuels & Technology Unit supplements these efforts by providing outreach and education to fleets and consumers about the benefits and incentives associated with alternative vehicles in order to ensure that the aforementioned infrastructure is optimally used to drive the adoption of alternative fuel vehicles.

The Commercial & Industrial Energy Services Unit provides comprehensive energy services aimed at reducing energy consumption and lowering energy costs for commercial and industrial facilities across Colorado, including agricultural, industrial, schools, and public buildings. The commercial and industrial sector in Colorado represents almost 50% of the total energy consumption in the state, thus warranting a significant focus of the office in support of its mission. CEO's Commercial & Industrial Energy Services Unit initiates and manages programs, research, and behavioral studies that drive significant cost savings in the commercial and industrial sector. More specifically, this Unit educates schools and industrial users about the benefits of energy management programs and supports the implementation of those programs. The Commercial & Industrial Energy Services Unit also supports and provides turnkey energy services for agricultural producers and public sector entities seeking to implement energy improvement projects to their facilities and, in turn, benefit from the reduced energy-related costs and environmental benefits associated with these projects. These services include technical analysis and assistance, coordination of incentives, facilitation of financing, and project implementation.

The Residential Energy Services Unit provides comprehensive energy services aimed at reducing energy consumption and lowering energy costs for households throughout all 64 counties of Colorado. The residential building sector represents approximately 23% of total energy consumption in Colorado - and this energy consumption comes at a cost. Nearly 30% of Colorado households experience energy burden, spending more than 4% of their household income on utility bills annually. This percentage increases dramatically for impoverished households. Further, residential energy consumption contributes to greenhouse gas emissions and air pollution, both of which generate social and



environmental costs as well. Therefore, for low-income residences - households meeting an annual income requirement or 200% or less of the federal poverty level - CEO's Residential Energy Services Unit uses a combination of federal, state and utility funding to provide direct energy retrofit services to these households through contracts with statewide service providers. CEO coordinates the funding sources, establishes performance standards, conducts technical and administrative training, and performs compliance reviews of the service providers. And, for households across the income spectrum, this Unit seeks to ensure access to energy efficiency and renewable energy by facilitating public-private-partnerships to support financing and working with local jurisdictions (i.e. providing technical assistance and training) to adopt more efficient building codes. In doing so, this Unit holistically addresses household energy burden and ensures access to energy services for all Coloradans, regardless of income.

The Operations Unit is responsible for the fiduciary integrity of the office and creating internal processes that ensure efficient, effective, and elegant operations. This Unit is responsible for overseeing the office's accounting and budget functions in order to ensure that CEO continues to prudently manage taxpayer dollars. The Operations Unit is also responsible for designing and facilitating CEO's data-driven strategic planning process and refining the office's internal and external policies and procedures. This Unit works with all other units to ensure all fiscal responsibilities are met in a timely and complete manner.



Strategic Policy Initiatives

CEO's strategic policy initiatives form the overarching goals of the office to deliver cost effective energy services and advance innovative energy solutions while benefiting the economic and environmental health of the state. While each Unit has additional goals and strategies, these initiatives represent a variety of efforts that are proven to be effective in helping CEO achieve its mission. The following outlines CEO's long-term strategic policy initiatives and one-year outcome goals.

Customer Service

Each agency in the State of Colorado has set a goal in their FY2018-19 performance plans aimed at improving the customer experience. To learn more about this effort, please visit <https://www.colorado.gov/performance/csm/customer>.

CEO's programs and services benefit energy consumers in all sectors and in every county in the state. Furthermore, CEO's organizational structure is designed around units for energy related customer classes. Many of the programs and services are executed by contractors using CEO branding for the programs and deliverables. CEO works to improve customer service for our contractors and program beneficiaries.



In order to improve the office's programming to meet its customers' needs, CEO will develop a complete baseline dataset through surveys and statewide outreach with which to evaluate program performance and necessary modifications.

Strategic Policy Initiative 1: Launch customer feedback surveys for all of CEO's programs and compile feedback and results by June 30, 2021. Incorporate the results of CEO's customer feedback surveys into CEO's annual strategic planning process and document survey-based program modifications as appropriate to evidence a market-based approach to CEO's programming.

Lead Goal: Launch customer feedback surveys for 5 of CEO's programs and compile feedback and results by June 30, 2019. Incorporate the results of CEO's customer feedback surveys into CEO's annual strategic planning process and document survey-based program modifications as appropriate to evidence a market-based approach to CEO's programming and improved program processes.

CEO will develop baseline metrics and questions for each of the 5 program surveys. CEO will deliver those surveys to various market and program participants, collect the results, and conduct an analysis of those results in order to inform CEO's expansion of customer feedback surveys to the rest of its programs in future years.

Transportation Fuels & Technology: Increasing the Adoption of Alternative Transportation Fuels

CEO's primary strategy to remove market barriers to alternative fuel adoption is to increase the number of publicly accessible alternative fuel vehicle charging stations. This will reduce Coloradans'



concerns about the driving distance from one station to another and increase the likelihood of electric vehicle purchases. CEO complements these efforts by providing education and technical assistance to fleets and the motoring public to highlight the benefits associated with alternative fuel vehicles in order to increase their rate of adoption.

Strategic Policy Initiative 2: Increase the number of new electric vehicles (EVs) sold on an annual basis from 4,156 in 2017 to 20,700 by 2021 and increase the total number of gasoline gallon equivalents (GGEs) of compressed natural gas (CNG) sold on an annual basis from 9,664,149 in 2017 to 16,462,000 by 2021.

Progress Outcome: Annual EV sales in Colorado increased from 2,229 in 2016 to 4,470 in vehicles sold in 2018. CNG fuel sales in Colorado increased from 8,221,186 GGEs in 2016 to 10,065,490 in 2018.

Lead Goal: Increase the annual number of Electric Vehicles (EVs) sold in Colorado from 4,470 in 2018 to 15,400 by June 30, 2019 and the GGEs of CNG sold in the state from 9,664,149 GGEs in 2017 to 12,447,000 GGEs in 2019.

Key Strategies:

- Install community-based charging stations to improve EV charging access for Coloradans
- Install corridor-based fast-charging stations to improve EV charging access and long distance travel for Coloradans
- Perform outreach to stakeholders to increase understanding and adoption of EVs and CNG vehicles
- Perform fleet training to increase understanding and adoption of EVs and CNG vehicles

Through Charge Ahead Colorado program, CEO will provide grants for EV charging stations in order to reduce range anxiety and further increase adoption of EVs. By contracting with fleet coach experts to work with local government, fleet managers, fuel providers and auto dealerships, CEO will build a pipeline of qualified applicants for the grant program. With specified federal and state electric vehicle designated dollars, CEO will give awards to selected applicants to install new EV stations and monitor and evaluate progress through the state's contract standards. CEO will educate Colorado consumers and employers about the benefits of electric vehicles and Colorado's tax credits through targeted outreach. CEO will conduct outreach to workplaces and support events to acknowledge workplaces that provide charging stations for employees.

Residential Energy Services: Increasing Average Annual Customer Savings from Weatherization Services

In Colorado, approximately 20-25% of households experiences severe energy burden. This burden means that these households are spending a disproportionate amount of their income on home heating and electricity compared to other Coloradans. The Weatherization Assistance Program offers services to these income qualified households to reduce energy burden and associated energy expenditures.



Strategic Policy Initiative 3: Increase average annual customer cost savings for Weatherization Assistance Program (WAP) clients from \$330 to \$400¹ by June 30, 2021.

Progress Outcome: Savings are calculated annually based on actual energy use.

Lead Goal: Through Colorado's Weatherization Assistance Program, install energy service measures in 2,315 homes, yielding, on average, at least \$350 in annual savings per low-income household by June 30, 2019.

Key Strategies:

- Target homes to install more major energy efficiency measures to reduce energy costs
- Target homes heating with high-priced propane and electric fuel sources to reduce energy costs
- Target homes for installation of solar PV to reduce electricity costs

Through contracts with statewide low-income energy service providers, CEO will perform direct energy retrofits, deliver technical and administrative training, conduct quality assurance, and implement compliance reviews of the service provider agencies. All of these efforts lead to reducing home energy costs, creating greater comfort, and increasing safety for Colorado's most at-risk citizens.

Commercial & Industrial Energy Services: Agricultural Energy Projects

A 2013 study of the Colorado agriculture sector estimated that Colorado has the potential to reduce energy usage by more than 90m kWh annually and install more than 10MW of on-farm renewable energy capacity within the next ten years. The portion of the market that is greater than "hobby farm" and smaller than "industrial scale" is approximately 15,700 producers. CEO's Agricultural Energy Efficiency (AgEE) program will focus its energy services on family-owned agricultural producers with energy intensive operations. Of those, CEO is targeting dairies, powered irrigators, greenhouses and nurseries. Over the next three years, program efforts will refocus from conducting investment-grade audits to encouraging actual project implementation. To-date, CEO's AgEE program has achieved 420k kWh in annual energy savings (0.5% of potential). CEO has provided energy audits to producers that identified the potential to achieve an additional 12.6M kWh of annual energy savings. However, the AgEE program currently suffers from a low number of projects implemented. More than 173 Colorado producers have received investment-grade audits, and only 33 of those producers have implemented energy efficiency projects (19% conversion rate). While the Colorado Energy Office will continue to feed its AgEE pipeline, it will refocus from solely conducting investment-grade audits to also encouraging project implementation.

Strategic Policy Initiative 4: Through the Colorado Agricultural Energy Efficiency Program (AgEE), facilitate the implementation of 90 projects by June 30, 2021.

¹ Savings goals are calculated based on actuals on a one year delay. CEO is currently performing a historic performance evaluation that will be completed in 2019. The results of that evaluation may require an adjustment of this 3-year goal.



Lead Goal: Through the Colorado Agricultural Energy Efficiency Program (AgEE), facilitate the implementation of 15 projects by June 30, 2019.

Key Strategies:

- Provide financial resources, increase access to financing, and leverage utility and trade ally contacts to decrease barriers to energy efficiency projects
- Create and distribute marketing collateral materials that showcase and describe the value of energy efficiency to agricultural producers
- Provide resources to producers to promote peer-to-peer education and networking
- Participate in trade shows to increase CEO's brand awareness and learn about trends and forces affecting the market

CEO has determined that the high cost of improvements and a lack of attractive financing options are negatively impacting the implementation of projects through the AgEE program. Consequently, the AgEE program will continue to raise awareness among target producers and increase the pipeline of AgEE projects via energy audits, but it will bolster these efforts by increasing financial resources specific to the agricultural industry and leveraging utility and trade ally contacts to decrease the barriers to energy efficiency projects in the state.

Commercial, Industrial & Residential Buildings: Facilitated/Closed Financing

Ideally, private lenders would provide the capital necessary for consumers and businesses to build out cost-saving clean energy infrastructure projects. This is an increasingly viable possibility as the price of clean energy has fallen dramatically in recent years. However, capital market inefficiencies and inherent challenges to financing mean that many clean energy opportunities remain underfunded or unfunded. Energy efficiency remains a classic example of this conundrum. In 2010, McKinsey estimated that a holistic approach to energy efficiency would yield energy savings in excess of \$1.2 trillion - more than double the amount of upfront investment required. Yet many of these opportunities remain untapped by private lenders. Private financing gaps exist for many reasons, including:

- **Short Track Record and Limited Data for Clean Energy Financing:** Without data, banks have a low level of confidence in how well different types of projects perform and this uncertainty leads to either hesitation to enter the market or unfavorable lending terms.
- **Project Size:** Many clean energy projects, such as efficiency upgrades and rooftop solar projects, are inherently small investments and geographically dispersed, with varying credit among project off-takers. These types of investments can be expensive to underwrite for a private lender, making the loan potentially uneconomical.
- **Need for Market Development to Unlock Demand:** Economically viable clean energy projects often require market development activities to spur demand among customers and suppliers. Examples may include educating contractors about new financing products, developing marketing materials, and so on. These “market-making” activities are typically uncompensated, leaving many market participants unable or willing to engage in them.
- **Organizational Behavior:** In order to begin lending into a new market, a bank has to hire new staff, learn about the risks and processes of a new market, and determine a precise “box” of



what kind of project and credit they are willing to lend to. This process takes time, commitment and money, all of which will only come with a greater understanding of market potential and risks.

As a result, and in recognition that market failures such as these are best addressed by the private sector, CEO works to facilitate public-private-partnerships capable of filling these finance gaps across the buildings sector.

Strategic Policy Initiative 5: Increase the annual amount of CEO facilitated/closed financing for energy improvement projects in the buildings sector from \$37.1M in FY2017-18 to \$55.0M by June 30, 2021.

Lead Goal: Increase the annual amount of CEO facilitated/closed financing for energy improvement projects in the buildings sector from \$37.1M in FY2017-18 to \$40.0M by June 30, 2019.

Key Strategies:

- Expand access to CEO facilitated financing programs (e.g. C-PACE, RENU, & EPC) statewide
- Train contractors capable of building a broader pipeline of projects
- Educate and engage more potential users of CEO facilitated finance programs
- Through CEO's Energy Performance Contracting (EPC) program, increase the annual conversion rate of Memorandums of Understanding (MOUs) to Investment Grade Audits (IGAs)
- Identify gaps in the market and fill them with additional finance products

CEO has developed and continues to oversee two public-private-partnership based financing programs capable of addressing the finance gaps in the commercial and industrial buildings sector - Energy Performance Contracting (EPC) and Property Assessed Clean Energy (C-PACE). In the Residential buildings sector, CEO facilitated the creation of the Residential Energy Upgrade Loan (RENU) Program, which it continues to manage in partnership with Elevations Credit Union. However, recognizing that low-to-moderate income households still struggle to access FICO-based lending products, such as the RENU loan product, CEO will introduce an on-bill repayment program in partnership with Fort Collins Utilities in FY2018-19 that will target low-to-moderate income households. In doing so, and in combination with the RENU loan program, CEO will address the finance gaps across the residential income spectrum and it will work to expand that access across the state.