

The Colorado Energy Office: Colorado Dairy and Irrigation Efficiency Pilot Program

Location: Colorado / Pilot Completion: August 2014
Statewide Program Launch: March 2015



Program Overview

In spring 2014, working with a broad group of government, industry, and utility partners, CEO launched the Colorado Dairy and Irrigation Efficiency Pilot to help make achieving energy efficiency easy for Colorado producers. The pilot was designed to address the barriers that prevent producers from investing in energy efficiency by bringing existing resources and partners together and leveraging new funding and a turnkey approach. CEO brought on a third party contractor to provide free energy audits and technical support to 12 producers. CEO's contractor served as the main point of contact and worked with producers throughout the entire process, including providing support for implementing energy efficiency improvements.

CEO intends to build off the success of this pilot by launching a statewide program in 2015 that is available to all Colorado dairies and producers with powered irrigation.

Program Successes

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. Irrigation was responsible for 50% of the total electric expenses in 2008 for Colorado's agricultural sector. And dairies, while fewer in number, are very energy intensive and operate 24 hours per day, seven days per week, 365 days per year.

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 that they had the necessary information to make cost-effective investments. Then the contractor 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.

A number of efforts have been undertaken in Colorado over the last few years to address the barriers of greater energy efficiency in the agricultural sector. These include outreach and marketing, reduced or free audits, and assistance identifying financial resources. However, these efforts are not always well marketed or coordinated and there is frequently a high barrier to entry. When combined with one point of contact that supports the producer throughout the process, producers have what they need to invest in greater efficiency.

Project Cost & Funding

Total project cost: Eight producers implemented improvements, investing \$233,000.

Dollars leveraged & savings: Producers received \$168,000 in incentives including utility rebates. Projects will yield an estimated \$47,000 in savings per year.

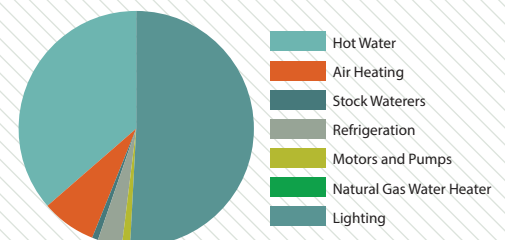
Total Producers: 12

Grants: The Colorado Energy Office provided grants of as much as \$25,000 per producer.

2013 Colorado Agricultural Energy Market Research Report Overview

- Colorado agriculture faces direct energy expenses of more than \$400 million annually.
- Energy costs account for 7% of the Colorado agricultural industry's overall expenses.
- In Colorado, electricity constitutes 41% of energy expenses for agricultural operations.
- Powered irrigation was responsible for 53% of the total electric expenses in Colorado's agricultural sector in 2008.
- In a survey of 138 producers, 62.3% indicated an interest in implementing an energy efficiency project within the next five years.

Dairy Audit Energy Savings by Recommendation (MMBtu)



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Success Story: Cottonwood Dairy

Cottonwood Dairy, located in Fort Lupton, Colorado, is saving over 25% in monthly electricity costs through their participation in the Colorado Dairy and Irrigation Efficiency Pilot program. The dairy facility, run by the McClay family, is 32 years old and is a relatively small dairy operation. It milks 320 cows and produces approximately 10,000,000 lbs. of milk per year. While some energy-efficient equipment already existed on the farm, a free energy audit provided by the Colorado Energy Office revealed energy savings of up to 34% for installation of all energy efficiency recommendations. The pilot also provided the McClays with a grant to help cover project improvements. The McClays installed new energy efficient equipment for milk cooling, water heating, space heating, and lighting which brought substantial economic and environmental savings to the dairy operation.



Jim McClay, owner of Cottonwood Dairy, said, "I wish we had done this a long time ago. Getting the energy audit really exposed us to the tremendous value of these improvements. With the support of CEO, we were able to get the projects implemented with minimal effort and we're already realizing significant energy savings."

The Cottonwood Dairy was one of eight dairies that participated in the Colorado Dairy and Irrigation Efficiency Pilot launched by the CEO in the spring of 2014. This pilot was designed to address the barriers that prevent producers from investing in energy efficient equipment and operations. A grant from the U.S. Department of Energy enabled the CEO to provide participants with a free energy audit and technical support services as well as grant funding for a portion of project costs. It resulted in eight dairies implementing energy efficiency improvements, estimated to save nearly 3,000 MMBtu and 742,859 pounds of GHGs annually. The Western Dairy Association applauded the pilot efforts, saying "the whole experience was positive for our dairy farmers as they found the grant process to be relatively simple and straightforward, particularly when considering the benefit of the funds to improve energy efficiency on their farms."

The pilot showed that by providing farmers with the resources needed to make achieving energy efficiency easy – from the application and contracting process, to the audit and identification, to the implementation of improvement measures – producers can stay focused on their business while reaping the benefits of energy efficiency. In turn, producers found tangible ways to reduce the costs of doing business and stay competitive with the adoption of sustainable practices. Better lighting, more reliable equipment, and more comfortable and safe working operations provide additional, noticeable advantages. The Colorado Rural Electric Association commented, "our member owners participating in the pilot program have achieved a reduction in energy costs associated with their operations, as well as a reduction in greenhouse gas emissions. We have received positive feedback from our member cooperatives and believe an expansion of the pilot will benefit our members."

Having laid important groundwork for a longer term agricultural energy efficiency initiative, the pilot will be used as a model for a statewide program which will expand to other areas of Colorado. The statewide initiative, set to launch in early 2015, will leverage a variety of funding sources including US Departments of Energy and Agriculture grants, CEO and Colorado Department of Agriculture funding, and utility rebates.

The CEO, with the ongoing support of their partners, will continue to assist producers like the McClays to achieve energy efficiency through a streamlined program that provides free energy audits and technical support and connects them with the resources to get projects implemented.