

Energy



www.ext.colostate.edu



CSU EXTENSION ENERGY NEWSLETTER

Issue 62

December 2015

Welcome to the 62nd issue of the CSU Extension Energy newsletter. This newsletter is distributed as a way to give the public, our partners, and Extension staff updates on CSU Extension energy work and its context in Colorado. Our overall mission is: 1. to empower Coloradans to make more informed energy decisions; and 2. to promote a broad, unbiased understanding of energy issues.

Please forward this newsletter to anyone you think might be interested. Also feel free to send us your organization's energy-related news and events for listing in future newsletters. And don't forget to Like us on [Facebook](#) to get updates on select energy news from Colorado and around the world.

Table of Contents

VOTE FOR 2016 LUNCH 'N' LEARN WEBINARS.....	1
SWAP PROGRAM RECOGNIZED BY USDA.....	2
COMMUNITY ENERGY ASSESSMENTS STARTING TO HAVE IMPACT.....	2
GUEST ARTICLE: CO. DAIRY AND IRRIGATION EFFICIENCY PROGRAM.....	3
RESOURCE SPOTLIGHT: FACT SHEETS	5
DID YOU KNOW?	6
CSU EXTENSION ENERGY RESOURCES	6

VOTE FOR 2016 LUNCH 'N' LEARN WEBINARS

CSU Extension plans to offer a number of weekday lunchtime 1-hour webinars on a variety of energy topics in 2016. **WE WANT YOUR INPUT!!!** Potential topics include:

- Latest and greatest in home energy
- Off-grid/net zero 101
- LED update
- Clean Power Plan
- Renewable energy tax credits/finances

- Bioenergy Alliance Network of the Rockies project
- Ag energy efficiency
- Solar options (purchase/lease/solar garden)
- Paris Climate agreement update
- Solar stock tanks
- Electric vehicles
- Methane leakage
- Green MLS (for realtors and homeowners)
- Solar space heating
- Renewable Portfolio Standards update
- Or “write-in” your suggested topic!

Please [click here](#) to register your vote by December 8!

SWAP PROGRAM RECOGNIZED BY USDA

USDA Rural Business Service Administrator Sam Ridders paid a visit to Colorado State University’s Rural Energy Center (REC) in November to formally recognize the USDA grant award for REC’s Solar and Wind Assessments for Pivots (SWAP) program. Mr. Ridders was excited to promote the program, which will begin solar and wind economic feasibility assessments for Colorado farmers with center pivot sprinklers this month. The Administrator was especially pleased to learn about REC’s waiting list for the program, indicating high interest.

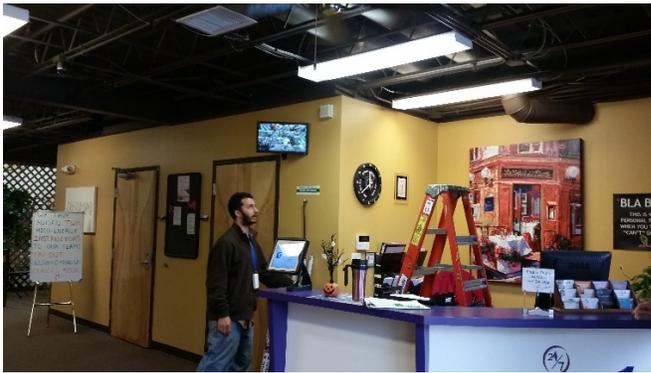
Completed assessments will be delivered to participating producers in early 2016 and phone consultations will be offered to review the report findings. Along with renewable energy system sizes and annual electricity generated, each report will provide estimated installation costs, loan payments, O&M costs, property insurance costs, energy savings, return-on-investment, anticipated payback year (on a modified cashflow basis), and 25-year net present value. Select tax implications such as the federal tax credit and accelerated depreciation will also be provided. For a limited number of applicants interested in moving forward with a project, REC staff will provide additional technical assistance such as a site visit with an installer, facilitating net metering agreements with local utilities, and more detailed financial analysis as applicable. It is expected that participants interested in moving forward with projects would apply for USDA Rural Energy for America (REAP) 25% grant funds to offset some of the upfront costs of their projects.

COMMUNITY ENERGY ASSESSMENTS STARTING TO HAVE IMPACT

In addition to identifying \$35,000 in energy savings from public building lighting assessments and municipal fleet assessments in two small Colorado towns, the Rural Energy Center’s first two community energy assessments are starting down the road to impact. One of the towns took an REC recommendation to apply for grant funds for electric vehicle charging stations near its downtown to heart. That community is also planning to issue a request for Proposals for LED lighting in its public buildings.

The community energy assessments (CEAs) now underway in Wellington and Pagosa Springs aim to have similar impact, although the recommendations made may differ. One opportunity that is being researched in these current CEAs that wasn't part of previous CEAs is solar PV at water or wastewater treatment plants. As these plants tend to be large electricity users and open space, some municipalities have installed solar PV both to save money now and as a hedge against future rate increases. A common mechanism for this installation is the power purchase agreement, or PPA. Under a PPA, the local government would purchase power at a contracted price from a third-party developer. This price would ideally be at or lower than current electricity prices charged by the utility. These are grid-connected systems and PPA contracts typically last 20 years.

But, what makes sense in one location and for one community may not make sense for another. This is why the CEAs involve a stakeholder meeting early in the process which allows attendees to vote for their preferred opportunities in energy efficiency and renewable energy. These votes are presented in the CEA reports for consideration by Town Boards as they decide how best to "have impact".



REC Director Cary Weiner inspects LED tubes he installed as a demo for a 24-7 fitness center in Wellington.



The Pagosa Springs Visitor Center was one of 8 public buildings to receive lighting assessments in that community.

GUEST ARTICLE: CO. DAIRY AND IRRIGATION EFFICIENCY PROGRAM

Submitted by the Colorado Energy Office

The Colorado Energy Office (CEO) is implementing a statewide Colorado Dairy and Irrigation Efficiency Program designed to reduce energy use in Colorado's agricultural sector. This program is the go-to resource for dairy and irrigated crop producers looking for objective, third-party information and advice about practical and proven ways to save energy and money.

Dairy and irrigated crop producers located in Colorado can take advantage of the benefits provided by the Colorado Dairy and Irrigation Efficiency Program. The Program's **free services** for dairy and irrigated crop producers include:

- Expert assistance and energy audits to identify energy efficiency and renewable energy opportunities
- Technical assistance to help producers select and implement cost-effective projects and practices
- Assistance with accessing financial incentives to help cover the costs of energy-saving equipment upgrades

These free program benefits translate into time and money that producers won't have to spend to learn practical ways to save 10-30 percent on energy bills.

Several dairy and irrigated crop producers have already taken advantage of the program benefits.

The Colorado Dairy and Irrigation Efficiency Pilot Program assisted Jim McClay, owner of Cottonwood Dairy, with a free energy audit, technical assistance and access to cash incentives that have helped him take control of energy costs and achieve long-term savings. "I wish we had done this a long time ago," says Jim. "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."

To learn how this program helped the Cleland Dairy in Erie reduce electricity costs 45 percent, visit:

http://www.denverpost.com/business/ci_28580878/colorado-dairies-farms-trying-cut-consumption-electricity-benefit-from-energy-subsidy

Conducting the Energy Audits

The Colorado Dairy and Irrigation Efficiency Program provides a free and comprehensive energy audit conducted by an experienced ag energy advisor. The energy advisor will closely examine all of the specifics of each operation during the energy audit. This includes an analysis of all systems and equipment and an evaluation of energy usage to calculate estimated energy savings and find the best ways to manage costs.

GDS Associates is providing the energy audits and has conducted thousands of agribusiness energy audits over the years. Their certified energy auditors understand that producers need to take into consideration many factors in addition to looking at energy. Michael Turner, from the CEO, who oversees the Colorado Dairy and Irrigation Efficiency Program, had this to say, "Our energy advisors understand that for dairy producers cow comfort equals productive and healthy animals. That's why something like proper ventilation is so important. The right fans can save you energy and money while keeping your cows comfortable all year round. The wrong fans can cost you much more to operate, raising your energy costs and reducing your bottom line. An energy audit will show you which equipment is right for your farm while keeping things like cow comfort in mind. For irrigated crop producers, this program can also demonstrate how producers can reduce irrigation system pressure without compromising performance. We are here to help you."

Reports and Financial Incentives

Following the audit, participants will receive a report of the findings, including a list of energy efficiency and renewable energy recommendations and a summary of financial incentives and grants available for that producer. The program also provides support in helping producers apply for incentives or grants available to assist with the energy efficiency recommendations in the report. Depending on the situation, there can be financial incentives available for things like upgraded motors, variable frequency drives, controls, a low-pressure nozzle package, scroll compressors, heat-recovery tanks, milk pre-coolers, water heaters and more.

Getting Started

There are only 40 irrigation and 40 dairy energy audits available and several of the slots have already been approved for other producers. Space in the program is limited and filling fast. Don't miss out on this opportunity to improve your operation's bottom line.

Visit www.colorado.gov/energyoffice/agriculture-energy-efficiency for more information and the application used to determine eligibility, or call 1-800-441-8525 for assistance.

RESOURCE SPOTLIGHT: FACT SHEETS

Can one have too many fact sheets? If so, we're guilty! CSU Extension has over 20 energy-related fact sheets for you to choose from to help you make decisions on everything from purchasing an electric vehicle to insulating your home. The full list can be found at CSU Extension's new website: <http://extension.colostate.edu/topic-areas/energy/> but is also provided below for your perusal (hyperlinks included!). All are free to download/print at the individual level or to offer at your local hardware store, sustainability booth, or however you see fit!

- [Agricultural Energy Audits \(6/12\)](#)
- [Air Sealing Colorado Homes \(2/13\)](#)
- [Easy and Inexpensive Home Energy Ideas \(8/09\)](#)
- [Electric Vehicles in Colorado \(5/12\)](#)
- [Electricity Generation in Colorado: What Happens When You Flip the Switch? \(4/14\)](#)
- [Energy Checklist for Homeowners \(12/08\)](#)
- [Energy Checklist for Renters \(3/14\)](#)
- [Energy Conservation in the Home \(3/14\)](#)
[Spanish Version](#)
- [Harvesting Energy from the Sun: Solar Photovoltaics \(10/09\)](#)
- [Heating Colorado Homes \(9/13\)](#)
- [Insulating Colorado Homes \(9/13\)](#)
- [Introduction to Domestic Solar Hot Water Systems \(8/13\)](#)
- [Landscaping for Energy Conservation \(3/09\)](#)
[Spanish Version](#)
- [Oil and Gas Development in Colorado \(9/14\)](#)
- [Saving Energy in My Home: Coloring & Activity Book \(5/12\)](#)
- [Solar Lease Financial Calculator \(11/14\)](#)
- [Solar Leasing for Colorado Homes \(8/12\)](#)
- [The Sun-tempered Superinsulated House \(3/14\)](#)
- [Using a Power Monitor to Control Your Electricity Costs \(11/14\)](#)
[Spanish Version](#)
- [Water Heating in Colorado Homes \(9/13\)](#)

- [The Whole-House Approach to Energy Efficiency \(12/14\)](#)
- [Wind Energy for Colorado Home Owners, Farmers and Small Businesses \(5/15\)](#)
- [Wind Site Assessment \(Grid-tied System\) – DIY \(11/14\)](#)

DID YOU KNOW?

At 1.0 lbs. of CO₂e emitted per kilowatt-hour of charging in Colorado, electric vehicles still “beat” emissions from new non-electric vehicles that average 33.7 miles per gallon.

CSU EXTENSION ENERGY RESOURCES

- Like the [CSU Extension Energy Facebook page](#) for energy news updates from Colorado and around the world
- Borrow a [Home Energy Audit Loan \(HEAL\) program kit](#) from your local Extension office
- Conduct a [DIY home energy audit](#), solar assessment, or wind assessment
- Download a [fact sheet](#) or online decision tool
- View recorded webinars and [videos](#)
- Borrow a [School Energy Activity Loan \(SEAL\) program kit](#)
- Teach from our [Clean Energy Curriculum for Colorado Middle and High Schools](#)
- Ask an [energy expert](#)
- Track energy legislation in Colorado and nationwide using the CSU Center for the New Energy Economy’s [Advanced Energy Legislation Tracker](#)