



YOUR ENERGY COLORADO NEWSLETTER

Issue 74

December 2018

Welcome to the 74th issue of CSU Extension's 'Your Energy Colorado' Newsletter. The mission of Your Energy Colorado is to facilitate sustainable energy decisions in the state. As the name implies, we put the power to shape Colorado's energy future in **your** hands.

This newsletter gives the public and our partners updates on our work and its context among all things energy. 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 follow us on social media to get energy tips, fast facts, and commentaries on emerging energy news.**



Residential Energy Survey Reveals Consumer Needs

Almost 400 Colorado residents responded to CSU Extension's needs assessment survey, which was delivered in nine diverse locations in the state. Initial results of the needs assessment show high needs for more information on home energy efficiency, sustainable energy options on a budget, and considerations for going solar. Some locations showed high interest in advancing sustainable energy in their communities. Among those who rated themselves as having high awareness of sustainable energy, the topic of greatest interest was all-electric, net zero energy homes.

Sixty one percent of respondents think that we're not moving to sustainable energy fast enough, 32% thought that current steps toward sustainable energy are about right, 5% think we're moving too fast, and 1% is against the move to sustainable energy. Most respondents have made their home more energy efficient in the past few years, while almost 20% had installed a renewable energy system over that same time period.

As far as future actions, interest in making homes more energy efficient was highest, and financial barriers were identified as the greatest obstacle. Slightly more respondents were motivated by the environmental benefits of sustainable energy than the financial benefits. Online resources such as websites, energy calculators, and videos were the highest ranking "delivery methods" along with educational signage at stores where energy-related products are sold.

CSU Extension plans to analyze the data further as we continue to prioritize and develop new educational resources. We hope to share a report with the public so that others can learn from the lessons of this effort.



On-Farm Solar Assessments Expand

Colorado State University's Rural Energy Center is offering free economic feasibility assessments for Colorado farms interested in learning their cost-benefit for use of solar energy. The Center has already conducted feasibility assessments for 30 irrigated farms and 10 feedlots and has just expanded the program to greenhouses and dairies as well. The Farm Assessments for Solar Energy (FASE) program provides estimates of initial costs, ongoing costs, tax implications, energy savings, and incentives as well as a detailed cash flow analysis that producers can use to make a decision about whether or not to pursue solar.

Results from recent assessments are promising, as the average on-farm solar array would have a 7% return on investment and only three years of negative cashflow on a cumulative basis. Solar arrays could be installed on buildings, open space, or even as shade structures. The solar arrays being evaluated would tie into the grid and be used to offset the electricity costs of pumping water, lighting, ventilation, and other agricultural uses. Grants are available through USDA and the Colorado Department of Agriculture to maximize ROI. Program partners include Rocky Mountain Farmers Union, the Colorado Livestock Association, the Colorado Energy Office, and Morgan County Rural Electric Association.

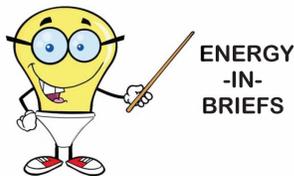
Farms participating in the FASE program must receive 51% or more of their gross receipts from agriculture. Visit <http://ruralenergy.colostate.edu/fase> to submit the short application. Cary Weiner, CSU Rural Energy Center Director, can be contacted with questions: cary.weiner@colostate.edu or (970) 491-3784.



Pollinator-Friendly Solar Effort in Northern Colorado

The image of bees and butterflies zooming around native flowering plants growing between rows of solar panels may be coming soon to Colorado. CSU Extension is working with Poudre Valley Rural Electric Association to recommend pollinator-friendly native vegetation and establishment and maintenance strategies for PVREA's Coyote Ridge solar array at the Larimer County landfill. While states like Minnesota and Maryland have seen legislation passed around pollinator-friendly solar so that guidelines are developed and claims can be verified, no formal strategies exist in Colorado. With the growth of community- and utility-scale solar in the state, the opportunity is high for this project to have wider ramifications. Extension plans to deliver recommendations to PVREA in early 2019.





Electric Vehicle Fuel Costs

You may hear that one big advantage of owning an electric vehicle over a gasoline vehicle is that operating costs are much lower for EVs. Battery electric vehicles (BEVs) are completely fueled by electricity but also have fewer parts that require maintenance – no timing belts, motor oil, water pumps, radiators, fuel injectors, or transmission fluid. This certainly does help keep operating costs down. Plug-in hybrid electric vehicles (PHEVs) accept both electricity and gasoline as fuel sources, so they require maintenance that is similar to maintenance performed on gasoline vehicles, but at greater time intervals. However, one sometimes overlooked aspect of operating costs when comparing EVs to gasoline vehicles are that fuel costs for EVs can be quite nuanced.

[Read more: EV Fuel Costs](#)

To Go All Electric? (Part 1: Financial Costs & Benefits)

As electric vehicle sales continue to soar, there's also been a growing buzz in the sustainable energy world about fully electrifying buildings. The theory is that we can electrify almost everything and then produce that electricity with clean, cheap, renewable electricity from wind, solar, hydro, and battery storage. It's a compelling argument on the surface, so we thought we'd dig a little deeper into costs and benefits to fully electrify homes.

[Read more: To Go All Electric Part 1](#)

To Go All Electric? (Part 2: Environmental Costs & Benefits)

In Colorado, homes heated with natural gas emit less carbon than homes heated with air source heat pumps, but the opposite is true in many other geographic regions. As Colorado continues to decarbonize its electric grid, homes heated with electric heat pumps will see a carbon benefit versus homes heated with gas. By 2021, for instance, Xcel Energy projects that its emissions rate will fall to 1.09 lbs./kWh, making emissions from homes heated with gas even with homes heated by air source heat pumps. Interestingly, once emissions rates get down to California's level, even highly energy efficient homes heated with natural gas will emit more carbon than standard homes using air source heat pumps.

[Read more: To Go All Electric Part 2](#)

Did You Know?

GRID Alternatives Colorado recently completed construction of Colorado's first floating solar array at the Town of Walden's drinking water treatment facility. The floating system, where modules are mounted on pontoons and float atop the facility's lagoon, was a solution for the town to go solar because they didn't own enough land to host an array. The 75 kW project, constructed using Jinko solar modules, will provide clean power to treat drinking water for the town as well as the local school district and Jackson County offices.

In the News:

Xcel Energy, Colorado's largest utility, aims to have zero carbon emissions by 2050 in industry-first plan.

[Read the full article from the Colorado Sun here.](#)

Upcoming Events

January 23rd, evening: Know Before You Go Electric (EV workshop)

- City of Centennial Community Room, 7272 S. Eagle Street
- Contact [Tim Aston](#) of CSU Extension for details

January 31, 9:00 am- 12 pm: Ag Energy Session at the Colorado Farm Show

- Colorado Farm Show, Greeley
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Your Energy Colorado Resources

- Follow the [Your Energy Colorado Facebook page](#) for energy tips, news commentaries, and more
- Visit our [Energy-In-Briefs blog](#)
- Download and/or print CSU Extension energy [fact sheets](#)
- Download and/or order printed copies of our [Home Energy Guide](#)
- [Calculate your savings](#) from switching light bulbs, a new furnace, a low-flow showerhead, adding insulation and more
- Assess your [solar potential, costs, and benefits](#)
- Conduct a [DIY home energy audit](#)
- Watch [energy webinars](#)
- [Borrow an energy kit](#) to teach youth, for a public demonstration, or to conduct a home energy assessment
- Teach one of our many hands-on, standards-based [energy lesson plans](#)
- Ask an [energy expert](#) a question

- Track energy legislation in Colorado and nationwide using the CSU Center for the New Energy Economy's [Advanced Energy Legislation Tracker](#)
- [Contact us](#) to request an energy efficiency, solar, electric vehicle, or rural energy workshop



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