



YOUR ENERGY COLORADO NEWSLETTER

Issue 71

March 2018

Welcome to the 71st 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 [Facebook](#) to get energy tips, fast facts, and commentaries on emerging energy news.**



FIRST ENERGY PANEL AT COLORADO FARM SHOW

The Colorado Farm Show generously hosted an educational session on farm energy this past January in Greeley - the first of its kind. The event highlighted opportunities and challenges for farm energy projects in Colorado, included case studies of small hydropower and other projects, and contained a robust panel discussion on the future of farm energy in the state. About 50 attendees were in attendance, which was a testament to the rising interest in the farming community about how to participate in the sustainable energy economy.

A major theme that arose from the session was the need for continued collaboration between agricultural producers, utilities, academia, and government to plant the seed for growth of sustainable farm energy projects. A producer must be motivated to invest and willing to go through the assessment and procurement processes. Utilities and academia can help their clients understand the value of a potential investment and facilitate adoption. Government programs can further streamline projects and offer funding until the market functions without intervention. To get to that point, it will take successful projects with strong returns-on-investment, peer-to-peer and other learning experiences, progressive utility policy, and the continued decline of renewable energy prices.



FARM ENERGY VIDEO

CSU Extension, the Colorado Energy Office, and the Colorado Department of Agriculture have come together along with trade groups and utilities to create a robust ecosystem in support of sustainable energy projects in Colorado. Watch this video to see our work in action!



CSU BRANCH FACILITY ASSESSMENTS COMPLETED

As part of CSU's commitment to reduce carbon emissions, CSU's [Rural Energy Center](#) recently completed energy and water assessments of 11 Agricultural Experiment Stations and 14 Colorado State Forest Service offices. Over 100 potential projects were identified in total, ranging from toilet replacement and weatherization to LED lighting and furnace upgrades. Our recommendations totaled over

\$170,000, with estimated annual savings of over \$25,000 for a simple payback period under 7 years. Lighting projects tended to have the quickest payback periods, whereas water upgrades had the longest. The recommendations were provided to CSU Facilities, which intends to prioritize projects for implementation.



CSU RENEWABLE ELECTRICITY PROGRESS

From [The Coloradoan](#):

"Colorado State University officials are wading through about 75 proposed projects to help the school reach 100 percent renewable energy by 2030. The university received bids from 27 companies, some of which proposed multiple projects, CSU energy engineer Carol Dollard said. 'We got a lot more responses than we thought we would,' she said. "It was, frankly, a little overwhelming."

CSU President Tony Frank signed a Climate Reality Project renewable energy pledge in January 2017 following a student- and faculty-driven effort that included more than 4,300 petition signatures. The university put out a request for proposals later in 2017."

A team of CSU officials and community members is now reviewing the bids, which include solar and wind projects, Dollard said. Details on the bids are scant as the review process continues, but Dollard said the team hopes to have "more clarity" in March.

"We're in the process of figuring out how to make it work," she said. "It's messy and complicated."

The process is complicated for a few reasons, Dollard said. For one, Colorado lacks "retail choice" for electricity, which means electricity users can't pick and choose among different providers. CSU, a land grant university, touches the boundaries of 19 electric utilities throughout the state and must work with each to coordinate deliveries of electricity.

About 85 percent of CSU's electricity load comes from Platte River Power Authority via Fort Collins Utilities, 10 percent comes through Xcel and the remaining portion is split among 17 smaller providers throughout the state, Dollard said. Fort Collins Utilities has been "very responsive" to CSU's renewable electricity efforts, Dollard said.

The city of Fort Collins is working to achieve carbon neutrality by 2050, and Platte River Power Authority recently sealed the deal on a 150-megawatt wind farm that could make Fort Collins electricity nearly 50 percent renewable.

The university also hopes to achieve carbon neutrality by 2050.

CSU's electricity resource mix is near-identical to that of Platte River Power Authority: roughly two-thirds coal, 19 percent hydropower, and about 13 percent wind and solar.

CSU's planned pivot to renewables will influence greenhouse gas emissions in Larimer County, where the university is the fifth-largest polluter. About half of the university's greenhouse gas emissions came from

electricity, according to university data.

The switch to renewable energy is also expected to lower electricity costs for the university, which are projected to more than double in the next two decades. Electricity costs currently total \$12 million but are projected to jump to \$30 million by 2037.

Officials aren't interested in pursuing a renewable energy path paved by renewable energy certificates, Dollard said. Renewable energy certificates (RECs) are tradable credits that allow an entity to legally claim the "green" benefits of renewable energy without necessarily using that energy.

"It's sort of an accounting way to say, 'I helped a wind farm get built in Texas even though my university is in Boston,'" Dollard said. "I don't want to argue with that, but that was not our goal. We're not supporting (renewable energy resources) that can't physically get here."

That conviction makes CSU's goal more complicated. CSU is one of the first large American universities to pursue 100 percent renewable energy without RECs.

"There are other institutions of higher education and green-minded corporate consumers behind us, cheering and saying, 'OK CSU, you figure that out and we'll be right behind you,'" Dollard said, laughing."

SMALL WIND COMING TO COLORADO FARMS

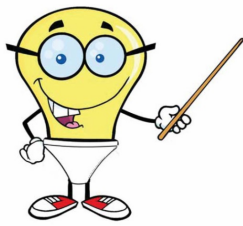
New 25 kW turbines that match the load of many farms have been introduced to the market over the course of the last year. These turbines offer a lease option so that upfront cost and operations/maintenance barriers can be overcome, giving small wind an advantage over otherwise cheap solar. About two dozen leases for these turbines are planned for farms in northeastern Colorado. With the 30% federal tax credit for small wind systems just extended in the federal Bipartisan Budget Act of 2018, will we see this grow further? What are the considerations for small wind on Colorado's farms, and how do wind leases compare to solar and other financing structures? Charles Newcomb of mCloud will answer these and other questions in a [CSU Extension Lunch 'N' Learn webinar](#) on March 9, 2018 at 12pm.



[Register here](#)

FOOD FOR THOUGHT

The article '[Reclaiming Environmentalism](#)' in the Breakthrough Journal gave us some interesting food for thought this week. Tisha Schuller, former head of the Colorado Oil and Gas Association and current principal of Adamantine Energy, lays out her path from closed to open mindedness on the role of natural gas in our energy economy. While not everyone will agree with all of her points, we thought we'd highlight it in an effort to stimulate thought and civility.



ENERGY
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ENERGY-IN-BRIEFS

CSU EcoCAR3 Builds Innovative Hybrid-Electric Camaro

EcoCAR3 is the latest Advanced Vehicle Technology Competition (AVTC) sponsored by the U.S. Department of Energy and General Motors, and Colorado State University is one of 16 universities participating in the four-year competition. As a unique opportunity for students to directly work and connect with government, industry and academic professionals, AVTCs have provided students with hands-on experience since 1988 by building vehicles that are integrated in future vehicle developments to reduce environmental impact and fossil fuel energy demands of transportation.

Effect of Solar Tariffs on Local Installers (guest post by Sandbox Solar, LLC)

Solar now employs 374,000 jobs nationally and 7,897 jobs locally in the state of Colorado. Much of this exponential growth in workforce has been due to the natural maturation of an industry, innovation, public awareness, and reduction of material costs.

[Read More about EcoCar3](#)

[Read More about Local Solar Installers](#)

IN THE NEWS

- [BP: Oil Demand Is Going to Peak in the Next 20 Years, Christopher Alessi, The Wall Street Journal, 2/20/18](#)
- [Colorado Drillers Pumping Record Oil, More On The Way, Ben Markus, CPR, 2/16/18](#)
- [Colorado Is A Bright Spot In Lagging Solar Jobs Report, Grace Hood, CPR, 2/7/18](#)
- [Coal's foes and friends get fired up in hearing over future of Xcel plants in Colorado, Aldo Svaldi, The Denver Post, 2/1/18](#)
- [A Colorado Company Uses Rice Waste To Generate Power In India, Nell London, CPR, 1/31/18](#)
- [Colorado Supreme Court To Hear Oil And Gas Drilling Case, The Associated Press, CPR, 1/29/18](#)
- [Trump Hits Imported Solar Energy Products With Tariffs, The Associated Press, CPR, 1/22/18](#)
- [Colorado Considers New Post-Firestone Gas Line Rules, Grace Hood, CPR, 1/9/18](#)
- [Xcel solicitation returns 'incredible' renewable energy, storage bids, Robert Walton, Utility Dive, 1/8/18](#)
- [Could 2018 Be The Year Colorado's Green Energy Debate Goes Big?, Grace Hood, CPR, 1/2/18](#)
- [Jump starting the EV revolution will take more quick charging stations, but who will pay for them?, Aldo Svaldi, 12/31/17](#)
- [Colorado governor ready to fight 'half-cocked' feds from changing state rules, David Krause, The Aspen Times, 12/29/17](#)
- [Trump Admin Rolling Back Obama-Era Rules For Oil, Gas Drilling, The Associated Press, CPR, 12/29/17](#)
- [NREL scientists are developing windows that can generate electricity and provide their own shade, Tom McGhee, The Denver Post, 12/23/17](#)
- [Sustainability Careers Have Gotten A Trump Bump — At The Local Level, Grace Hood, CPR, 12/14/17](#)
- ['People are freaking out.' Will electric vehicles doom your neighborhood auto mechanic?, Peter Holley, The Washington Post, 12/11/17](#)

RESOURCE SPOTLIGHT: COMMUNITY ENERGY ASSESSMENTS

Rural communities in Colorado often have less efficient energy systems and pay more for energy than densely populated parts of the state. At the same time, funding and financing for energy efficiency and renewable energy (EERE) projects in rural Colorado abounds. Many rural communities have not taken advantage of EERE opportunities because they lack the resources to identify and implement appropriate projects. But rural Colorado communities that have implemented EERE projects have saved energy and money while stimulating economic activity.

To address this issue, the REC conducts subsidized energy assessments for rural Colorado communities of ~1k – 10k people. These community energy assessments (CEAs) are a “snapshot” of opportunities present now, as opposed to a long-term strategic plan for EERE. Each CEA includes:

- A local energy stakeholder meeting to raise awareness of the assessment and to solicit input on community issues and priorities
- LED lighting assessments for all public facilities and up to 6 small businesses
- Solar energy assessments for select public facilities such as wastewater or water treatment plants
- Alternative fuel vehicle fleet assessments for public fleets
- In-depth data collection and analysis of EERE opportunities in the agricultural, commercial, public, and residential sectors of the community
- A CEA report, with high-level results presented to the participating local government
- Technical assistance to help implement “high priority” opportunities selected by the local government

If you are interested in more information or in participating as a community, [contact us](#).

DID YOU KNOW?

The federal Bipartisan Budget Act of 2018, signed into law this month, included the [extension of tax credits](#) for small wind and ground source (geothermal) heat pumps.

UPCOMING EVENTS

- **March 7-8: Graying Green: Climate action for an aging world workshops** Various times in Fort Collins and Denver
 - [More information](#)
 - **March 9, 12-1pm: CSU Extension Lunch ‘N’ Learn Webinar: Small Wind Coming to Colorado Farms** presented by: Charles Newcomb, mCloud;
 - [Register here](#)
 - **March 12-14: [Solar Power Mountain West 2018](#)** at the Hyatt Regency Aurora Conference Center
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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, farm energy, or Colorado energy workshop



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