



## YOUR ENERGY COLORADO NEWSLETTER

Issue 73

September 2018

Welcome to the 73rd 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.**

### Your Response Requested: Energy Needs Assessment



COLORADO STATE UNIVERSITY  
EXTENSION



## HELP US HELP YOU!

Colorado State University Extension is requesting input from residents across the state on how to tailor our energy efforts to meet your needs.

How can you help? Take a short 14-question survey to tell us:

- What you already know about energy
- What you want to learn more about (solar? electric vehicles?)
- How you'd like us to provide that information

Participation is quick & easy! Fill out our survey at this link:

<https://tinyurl.com/energy-needs>

*We greatly appreciate your time and feedback.*



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## Inaugural Local Government Energy Academy a Hit

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Almost 80 people, including representatives from 25 different local governments in Colorado, attended the inaugural Local Government Energy Academy in Eagle from August 29-30. Initial evaluation results show that 100% of respondents rated their overall experience as excellent or good, all sessions provided respondents with new insight, 78% of sessions helped respondents discover a new sustainable energy opportunity, and 89% of sessions will impact the actions of respondents going forward.

The 1.5 day workshop featured keynote speeches from Kathleen Staks, Executive Director of the Colorado Energy Office, and Jacob Corvidae, Principal at the Rocky Mountain Institute. Ms. Staks was generous in taking lots of questions from the audience, and provided insight into the types of support her office can offer local governments now that CEO has a dedicated, reliable funding source from the state legislature. Mr. Corvidae highlighted how important energy efficiency is for homebuyers, advocated for transparency around energy consumption in the home-buying process, and provided inspiration around the cost-effectiveness of all-electric homes that are ready for net zero.

Roundtable discussions on Day 1 included a look at different local government approaches to planning and implementing sustainable energy measures and a look at how utilities can work to help communities meet aggressive renewable energy goals. High level staff from the Town of Eagle, Eagle County, the Town of Carbondale, and the Town of Minturn told the audience about their differing opportunities and challenges around energy in their communities. While some communities were being pushed by citizens and dedicated significant resources to sustainable energy as a result, other communities have been moving toward sustainable energy through leadership and as opportunities present themselves. Similarly, the utility panel offered different perspectives on how to see through change in that sector. The discussion included using 'Operation Roundup' funds to help communities achieve their renewable energy goals, identifying challenges to battery storage, and how both a utility's governance structure and power provider impacted operations and strategy.

Day 2 featured panels on energy efficiency and solar at public facilities, supporting community energy initiatives such as SolSmart and C-PACE, and how to participate in Colorado's development of an ambitious electric vehicle network. Local government, private sector, and non-profit voices were heard, and time was provided for networking. Most respondents want to see an annual event of this kind, and CSU Extension is considering options for another LGEA workshop next year.



[See more photos, ppts, and videos from the inaugural LGEA](#)

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## National Drive Electric Week

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It's National Drive Electric Week! This week is a "nationwide celebration to heighten awareness of today's widespread availability of plug-in vehicles and highlight the benefits of all-electric and plug-in hybrid-electric cars, trucks, motorcycles, and more." In Colorado, there are over a dozen events aimed to help people learn the value of EVs, often through first-hand experiences such as Ride N Drives. There may still be time to attend an event near you!



[See the full list of Colorado's EV Ride N Drive events](#)

## New Workshop Offerings from CSU Extension

CSU Extension has begun offering two new workshops across the state: Low Energy Homes and Know Before You Go Electric. The Low Energy Homes workshop was first delivered in Pueblo in August to fifty people. The workshop combines discussions around the whole house approach to energy efficiency, how to go solar, and considerations for switching to an all-electric home on the road to net zero into a single presentation. Attendees can come away with anything from a simple, low-cost tip to reduce energy use all the way to guidance on how to be fully net zero. Upcoming Low Energy Homes workshops will be delivered in Steamboat Springs on October 9 and in Carbondale on November 1 (see 'Upcoming Events' below).

The Know Before You Go Electric workshop is a variation of our popular Know Before You Go Solar workshops. Attendees will learn about the differences between battery electric and plug-in hybrid electric vehicles



[Request a workshop from CSU Extension](#)

as well as a range of considerations for both before taking the EV plunge. Both workshops can be delivered anywhere in Colorado upon request.

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## Study finds U.S. oil and gas methane emissions 60 percent higher than EPA reports (From Anne Manning, CSU Source)

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A new study that draws on previous work by Colorado State University scientists finds that the U.S. oil and gas industry emits nearly 60 percent more methane than current Environmental Protection Agency estimates. That amounts to 13 million metric tons of methane from oil and gas operations each year.

Published online June 21 in [the journal Science](#), the study is led by Environmental Defense Fund researchers, with support from 15 institutions and 19 co-authors, including Anthony Marchese, CSU professor of mechanical engineering. The study integrates over half a decade of research by a large community of scientists, among them Marchese; and Dan Zimmerle, senior research associate at the CSU Energy Institute.

In 2014, Marchese and Zimmerle led EDF-sponsored work into defining methane emissions from two key segments of the natural gas supply chain: [gathering and processing](#), near the front end; and [transmission and storage](#), further downstream. Their results helped shape the new estimates of total emissions just published. Over the last three years, their work has also been incorporated in and [cited by the EPA Greenhouse Gas Inventory](#).

The new EDF study estimates the current methane leak rate from the U.S. oil and gas system is 2 percent, versus the current EPA inventory estimate of 1.4 percent. While the percentages seem small, the volume represents enough natural gas to fuel 10 million homes – lost gas worth an estimated \$2 billion.

“It has been an honor and privilege to be part of this community of researchers to better quantify the extent of the problem of methane emissions,” Marchese said. “When we started this work, there was a debate as to whether total methane loss from all natural gas operations was 1 percent, or as high as 8 percent. Those of us who were familiar with the engineering equipment and practices in place had a hard time believing that the leak rate was 8 percent – but we really didn’t know. Now, based on what we’ve concluded from five years of effort, our focus can go to the actionable practices and technologies that can reduce emissions rates.”

More than [140 researchers from 40 institutions](#) were co-authors on the underlying papers. Fifty oil and gas companies provided site access and technical advice to these studies. The findings reported feature measurements at over 400 well pads in six basins. They include scores of midstream facilities, data from component measurements, and aerial surveys covering large swaths of the U.S. oil and gas infrastructure.

“These studies, synthesized in this Science paper, have transformed our understanding of methane emissions from natural gas systems in the United States,” said Professor David Allen, of the Cockrell School of Engineering at the University of Texas at Austin, who is a contributor to the new paper and lead author on several of the earlier studies.

Methane is a highly potent greenhouse gas, with over 80 times the warming impact of carbon dioxide over the first 20 years after it is released. It is also the main ingredient in natural gas, and a saleable product when recovered. The higher overall methane leak rate relative to EPA’s current

estimate underscores a growing strategic business and environmental challenge for natural gas in an increasingly competitive, lower-carbon economy.

“This is by far the most comprehensive body of research of its kind,” said EDF Chief Scientist Steven Hamburg. “Scientists have uncovered a huge problem, but also an enormous opportunity. Reducing methane emissions from the oil and gas sector is the fastest, most cost-effective way we have to slow the rate of warming today, even as the larger transition to lower-carbon energy continues.”

The International Energy Agency [estimates](#) industry can reduce their worldwide emissions by 75 percent – and that up to two thirds of those reductions can be realized at zero net cost.

“Although we confirmed that methane emissions are substantially higher than previously thought, the good news is that our new understanding provides a cost-effective path forward to eliminate the wastage of this valuable resource,” said Allen Robinson, professor and department head of mechanical engineering at Carnegie Mellon University.

Leading companies are beginning to recognize the challenge, but action to reduce emissions is only just getting started. In April, BP set its first quantitative methane target. Last month ExxonMobil committed to cut methane emissions and flared gas volumes, following an earlier announcement from its subsidiary XTO Energy that unveiled their methane reduction program. Shell, Qatar Petroleum and a host of other producers have committed to continuously reduce methane emissions across the natural gas supply chain.

Overall, EDF is calling for a 45 percent reduction in global oil and gas methane emissions by 2025 – a goal that would have the same short-term climate benefit as closing one-third of the world’s coal plants when achieved.

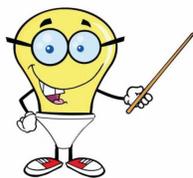
“Industry leadership remains crucial,” said EDF Senior Vice President Mark Brownstein.

“Companies have the ability to lead through operational best practices, comprehensive methane programs, target setting, technology innovation and pilots, and constructively engaging with the regulatory process.”

EDF recently announced plans to build MethaneSAT, a purpose-built satellite designed to measure and map human-caused methane emissions almost anywhere on earth. Due to launch in 2021, MethaneSAT will help both countries and companies track problem areas, find solutions, and monitor their progress.

EDF, the Oil and Gas Climate Initiative companies, and the UN Environment’s Climate and Clean Air Coalition are also collaborating on a set of peer-reviewed methane studies in locations across the globe, which will complement the data collected by MethaneSAT. These studies are built on the methods pioneered in the U.S.-based studies upon which the synthesis paper is based.

Read more about this work at <https://www.edf.org/climate/methane-studies>.



ENERGY  
-IN-  
BRIEFS

## ENERGY-IN-BRIEFS

### **Time of Use Rate Impacts**

Guest author Andrew Lyle - Sandbox Solar

Here's the scenario. It's a Tuesday evening in March. The kids need clean clothes for school tomorrow and dinner needs to be made. The clothes will be in the electric dryer for an hour and we're making a roasted chicken, which takes 1 hour 15 minutes at 400°F, then we have to clean the dishes after of course, and that takes an hour. New Time of Use rates may impact the timing of your household chores if you want to save money.

[Read more: Time of Use Rate Impacts](#)

### **Solar with Time of Use Rates**

Guest author Andrew Lyle - Sandbox Solar

Time of use rates are coming nationwide, if they haven't been implemented by your utility yet. The implementation of these rates are far from a nefarious profit gathering ploy. Many customers don't see a rate increase vs time agnostic traditional rates. Further, for those who choose to change their consumption habits to "game the system", easy to reach savings can be had. One question is how this new rate structure affects returns on solar PV systems. Below is an analysis of possible outcomes for the [City Of Fort Collins TOD rates](#). When a project analysis is undertaken, it is incorrect to do anything but hourly analysis on system performance.

[Read more: Solar with Time of Use Rates](#)

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## In The News

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- [California passes landmark 100% clean energy goal, Utility Dive, 9/4/18](#)
- [Regulators Approve Xcel Energy's Plan To Double Production Of Renewable Electricity, CPR News, 8/28/18](#)
- [Trump's New Coal Air Pollution Rules May Not Affect Colorado Much, CPR Staff, 8/21/18](#)
- [Proposed Wyoming Wind Farm Could Feed Northern Colorado's Renewable Needs, Associated Press, CPR, 8/20/18](#)
- [Coal-Fired Past Or Green-Powered Future? Pueblo Looks For A New Economic Leg Up, Grace Hood, CPR, 7/30/18](#)
- [Competing Environmental And Oil And Gas Groups Deliver 100,000s Of Ballot Signatures, Grace Hood, CPR, 8/6/18](#)
- [Methane Emissions From Oil And Gas Basins 60 Percent Higher Than Previously Thought, Leigh Paterson, CPR, 6/21/18](#)
- [Colorado Will Adopt California's Stricter Air Pollution Rules, Resisting Trump, The Associated Press, 6/19/18](#)
- [EPA Tells Colorado To Take Over The Summitville Mine Cleanup, The Associated Press, CPR, 7/10/18](#)
- [Oil And Gas Drilling Decision Delayed Near Great Sand Dunes National Park, The Associated Press, CPR, 7/10/18](#)
- [Boulder Nonprofit Eco-Cycle Wants To Build Zero Waste Communities, Xandra McMahon, CPR, 7/10/18](#)
- [Depending How You Look At It, Denver Green Roof Changes Are Simpler Or More Complex, Grace Hood, CPR, 6/13/18](#)
- [Oil And Gas Advocates Warn Taxpayers They Could Pay Up Later For Voting Against Drilling, The Associated Press, CPR, 6/12/18](#)
- [Free Power From Freeways? China Is Testing Roads Paved With Solar Panels, Keith Bradsher, The New York Times, 6/11/18](#)
- [Official blasts critic of nuclear plant cleanup, Dan Elliott, The Associated Press, 6/8/18](#)
- [Boulder Well Marks 1st PFC-Contaminated Water Case Outside Of El Paso County, Grace Hood, CPR, 5/31/18](#)
- [LimeBike E-Scooters Land In Denver After 'Begging For Forgiveness' In Other Cities, Michael Sakas, CPR, 5/31/18](#)
- [Amid Permian ramp up, U.N. cautions against fracking getting too big, too fast, Arren Kimbel-Sannit, Dallas News, 5/29/18](#)
- [Powered by citizen volunteers, air pollution study gets \\$1.6 million, Anne Manning, CSU Source, 5/25/18](#)
- [Longmont Pays Oil And Gas Companies \\$3 Million To Leave City Limits, Grace Hood, CPR, 5/25/18](#)
- [Local Control Takes A Novel Step With Longmont Paying Oil Drillers To Go Away, Grace Hood, CPR, 5/23/18](#)

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## Did You Know?

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When "cold climate" air source heat pumps were tested in six homes in Minnesota, they maintained an average efficiency of 270% and the electric resistance heat backup didn't kick in until 10 degrees F.

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## Upcoming Events

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**October 9, 5:30-7:30 pm: Winter Home Energy Management (Low Energy Homes) class**

- Colorado Mountain College - Steamboat Springs
- SUS 901
- Register [here](#)

**October 16, 10:30 am- 4 pm: Colorado Communities Cooperative Meeting**

- Westminster, CO
- Register [here](#)

**October 29: Colorado Rural Electric Association - Energy Innovations Summit**

- Denver, CO
- [Register here](#)

**November 1: Low Energy Homes workshop, 5:30-7 pm**

- 3rd Street Center, Carbondale
- Presented by CORE, CLEER, & Garfield Clean Energy
- RSVP [here](#) or at (970) 704-9200

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## Your Energy Colorado Resources

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- 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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