



# CSU EXTENSION ENERGY NEWSLETTER

Issue 64

June 2016

Welcome to the 64th 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.

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### 2016 LUNCH ‘N’ LEARN WEBINARS

Our next two bimonthly webinars are scheduled. All sessions BEGIN AT 12:00PM on the dates listed and will use Adobe Connect – all you need is a computer with speakers. [Click here](#) for more information about the webinar series or click the individual links below to register directly for one or more webinars.

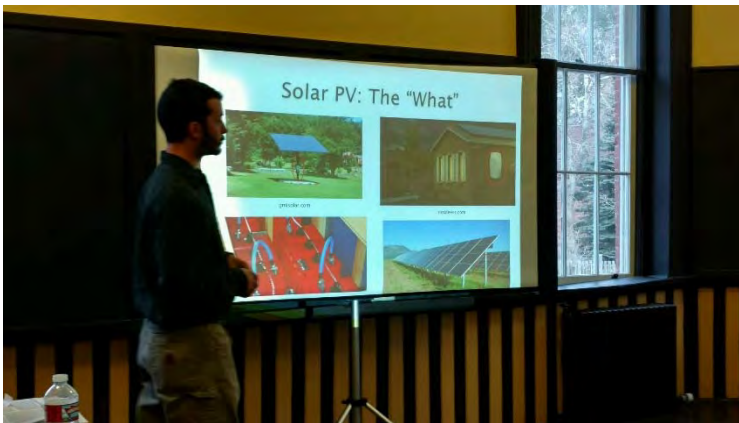
- July 12 – Shriram Santhanagopalan of the National Renewable Energy Laboratory will discuss the latest and greatest in energy storage technology, including both utility- and residential-scale applications. [Register here.](#)
- September 13 – Cary Weiner of CSU Extension will discuss solar options for the home, including comparisons between solar PV leases, solar loans, traditional loans, and community solar gardens. [Register here.](#)

We plan to bring webinars to you every other month for the foreseeable future. Stay tuned!

## **SOLAR OPTIONS FOR THE HOME WORKSHOPS**

CSU Extension recently completed two workshops on Solar Options for the Home. The first was held in late April at the recently restored Heritage Museum in Idaho Springs, where 15 people attended. The second was held in mid-May at the Larimer County Extension office in Fort Collins, where 20 people attended. Representatives from Fort Collins Utilities and Poudre Valley Rural Electric Association were in attendance at the Larimer County workshop. Both workshops covered the costs and benefits of solar PV and solar thermal systems, with a focus on how to choose between purchasing a system, leasing a system, or buying into a community solar garden. Financial comparisons were made between the different options, and more realistic depictions of “payback periods” were emphasized.

These workshops are part of CSU Extension’s core mission to help the public make more informed energy decisions free from bias. To request a workshop in your area, contact [cary.weiner@colostate.edu](mailto:cary.weiner@colostate.edu)



## **COMMUNITY ENERGY ASSESSMENTS IN KIOWA, LYONS**

CSU’s Rural Energy Center is continuing its efforts to conduct community energy assessments for small towns in rural Colorado that don’t have the resources to identify and take advantage of low-hanging fruit and funding opportunities in energy efficiency and renewable energy themselves. Our latest assessments underway are in Kiowa/Elbert County and in the Town of Lyons. On our visit to Kiowa, we held an energy stakeholder meeting with our local Extension agent, a local business representative, a Fair Board member, representatives from Elbert County facilities, and a local electrician. This stakeholders identified various potential opportunities for the Town, such as

updating the County energy code, installing solar at the Town wastewater facility, and promoting home energy efficiency. We then conducted lighting assessments at 6 County facilities, 2 Town facilities, and 1 local business before returning home to input data and put together the assessment report. Results of the assessment will be presented to the Elbert County Manager and the Kiowa Town Board on June 14.

Our stakeholder meeting in Lyons was a bit of a contrast, as Lyons has a municipal electric utility and an active sustainability working group. Stakeholders there expressed interest in on-bill financing for residential energy improvements among other items. The Town has already moved forward with a number of energy initiatives, including receiving a grant to install an electric vehicle charging station and installing upgrades through a prior energy performance contract. The Town is also supported by numerous programs offered in Boulder County to support clean energy. We look forward to continuing to serve these communities and other small towns interested in analyzing cost-effective energy opportunities in the near future.



## **CSU EXTENSION TO PROVIDE HOME ENERGY REPORTS**

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After an annual energy retreat attended by Extension agents from across Colorado, the energy team has decided to roll out a few new initiatives that will enhance our ability to help Coloradans make more informed energy decisions. In one of these initiatives, select Extension agents will offer home energy reports for County residents using natural gas or electricity as their heating fuel. A home energy report will consist of an energy bill analysis illustrating how much energy a household consumes for heating, cooling, and baseload electricity. This will include a comparison to Colorado averages based on number of occupants, location/climate, and home size. In addition, households will be able to request optional analyses to determine:

- solar PV system size, cost, and payback period/return-on-investment
- attic insulation payback period
- heating system upgrade payback period
- cooling system upgrade payback period
- hot water system upgrade payback period

As a whole, the home energy report is intended to be the basis for understanding a home's energy use and initial options for energy efficiency and renewable energy. It may also reveal whether a

home is a good candidate for a more in-depth energy audit. Stay tuned for more information as we develop this pilot program!

Energy Bill Analysis		Insulation Upgrade Analysis	
Home size (square feet)	2,000	Installed cost of insulation per square foot	\$2.75
Number of occupants	1	Efficiency of your heating system	0.99
Select closest city	Leadville	Initial R-value of area to be insulated	19
Select heating fuel	Electricity	Final R-value of area to be insulated	49
Select domestic hot water fuel	Electricity	Years to simple payback	10.0
Select heating fuel units (from bills)	kWh		
Do you use an active cooling system?	No		
Electricity cost	\$0.11 per kWh		
Natural gas cost	\$0.60		
Electricity Use			
Natural Gas Use	N/A		
	kWh		

Heating Upgrade Analysis		
Select year heating system installed	1992-2006	Efficiency
Select existing heating system	Electric resistance	1
Select new heating system	High efficiency air source heat pump	10
Annual heating savings	\$290.94	

## CNEE, TNC RELEASE NEW ENERGY POLICY TRACKING TOOL

*From Colorado State University "Source" by CSU External Relations Staff*

[The Center for the New Energy Economy at Colorado State University](http://www.spotforcleanenergy.org) and The Nature Conservancy have released the State Policy Opportunity Tracker (SPOT) for Clean Energy at [www.spotforcleanenergy.org](http://www.spotforcleanenergy.org).

The SPOT for Clean Energy is a publicly available database that allows users to quickly review the status of 38 clean energy policies across all 50 states. It includes policies in the areas of renewable energy, energy efficiency, financing, infrastructure and transportation.

The SPOT for Clean Energy is not a score card. Instead, it benchmarks clean energy policies, enabling the user to analyze both the status quo for a state and where there may be opportunities for future growth on clean energy. It draws from data sources of 18 organizations, including the Department of Energy, the Database of State Incentives for Renewables and Efficiency (DSIRE) and the American Council for an Energy-Efficient Economy (ACEEE).

The site also provides analysis describing key components of each policy, as well as the origin of the data used to assess state gaps. Most importantly, all the information available on the site is free, requires no login, and is fully downloadable.

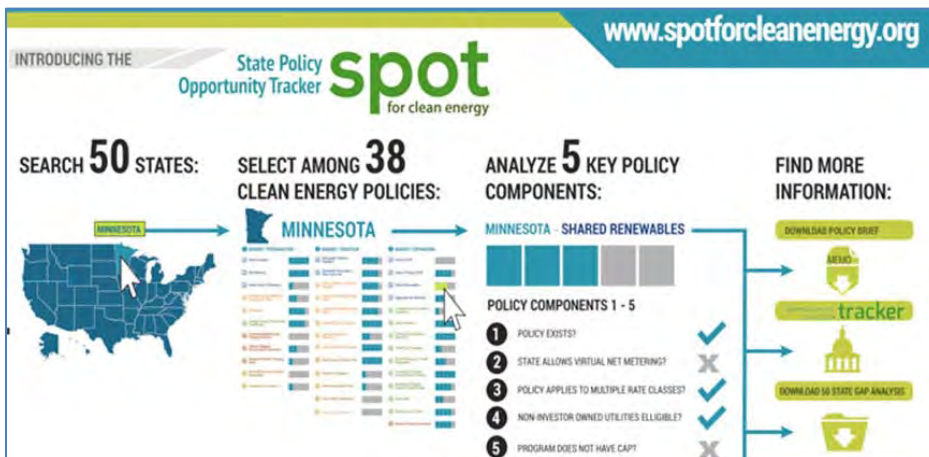
Bill Ritter Jr., director of CSU's Center for the New Energy Economy and the 41st Governor of Colorado, notes that "when we look at where clean energy policy has advanced, overwhelmingly states have led the way. We believe that trend will continue. This site enables state policy makers to analyze their current state policies, and how they can go further, in a way that has not previously existed."

"The Nature Conservancy has programs in all 50 states, and has always believed that successful state and federal policy starts with good information," says Lynn Scarlett, TNC's Managing Director of Public Policy and former Deputy Secretary of the Interior. "Business and community

leaders are eager to transition to a clean energy economy, and the information available through SPOT helps identify the policy gaps that must be filled to get us there.”

The Center for the New Energy Economy (CNEE), part of the CSU Energy Institute, is a privately-funded initiative led by Ritter at CSU and is assisted by a team of energy and environmental policy experts. CNEE provides strategy and technical assistance to governor’s offices, legislators, regulators, utility companies and stakeholders that will facilitate America’s transition to a clean energy economy.

The Nature Conservancy is a leading conservation organization working around the world to protect ecologically important lands and waters for nature and people. To date, the Conservancy and its more than one million members have been responsible for the protection of more than 119 million acres of land and thousands of rivers worldwide. Visit The Nature Conservancy online at [www.nature.org](http://www.nature.org).



## RESOURCE SPOTLIGHT: SOLAR LEASES

As solar becomes an option for an increasing number of households in Colorado, so might confusion over the costs and benefits of different solar options. Because they are typically 20-year contracts for the purchase of solar electricity, solar leases in particular can be intimidating for the average consumer. CSU Extension has a fact sheet and a financial calculator that can provide guidance on whether a solar lease may be right for you. While the fact sheet is intended for any household, the solar lease calculator is intended for a household that has already received a quote for a lease. The inputs for the calculator are simple:

- down payment (if any)
- initial monthly lease payment
- annual lease rate increase (if any)
- the amount of electricity (kWh) guaranteed by the solar provide in Year 1 of the lease

We have included default values for the cost of electricity from your electric utility and the rate at which that may increase, which one can customize. The calculator then spits out the “first year of

savings”, the payback year, average annual savings, and cumulative savings (20 years). It also provides an annual breakdown of costs and savings.

Both the fact sheet and the calculator can be found at this webpage:

<http://extension.colostate.edu/topic-areas/energy/energy-resources-solar-energy/>

The fact sheet is listed under “CSU Publications”, while the calculator is listed under “CSU Decision Tools”. Enjoy!

**Colorado State University**  
Extension

**Solar Leasing for Colorado Homes**

Fact Sheet No. 10.633 Consumer Series | Energy

by C. Weiner\*

A residential solar lease is a contractual agreement between a homeowner and a solar provider in which the homeowner leases solar photovoltaic (PV) panels from the provider for generating electricity. Under the terms of the lease, the homeowner is typically responsible for making monthly payments to the solar provider in exchange for the installation of and electricity generated by

Table 2 at the end of this fact sheet provides a fuller list of considerations that will help you decide if leasing or owning is right for you.

**Analyzing Lease Costs**  
Costs associated with a solar lease contract can be broken into four parts:

**Quick Facts**

- Solar leasing has made solar photovoltaics (PV) more financially feasible for homeowners who are unable to or uninterested in getting a traditional bank loan.

## DID YOU KNOW?

According to the Federal Energy Regulatory Commission (FERC), over 700 megawatts of wind, over 500 megawatts of solar, and 18 megawatts of natural gas made up all new U.S. electric infrastructure additions in the first quarter of 2016.

## UPCOMING EVENTS

- **July 12, 12-1pm**  
Lunch ‘N’ Learn webinar: Update on Energy Storage Solutions (Shriram Santhanagopalan of the National Renewable Energy Laboratory)  
[Register here.](#)
- **July 12, 6-8pm**  
Women in Sustainable Energy (WISE) – “Energizing Rural Colorado: Part II” at the Alliance Center in Denver.  
[Register here.](#)
- **September 13, 12-1pm**  
Lunch ‘N’ Learn webinar: Solar Options for the Home (Cary Weiner of CSU Extension)  
[Register here.](#)
- **September 28-29**  
CSU Energy Transition Symposium – Lory Student Center in Fort Collins.  
[Register here.](#)

## **CSU EXTENSION ENERGY RESOURCES**

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- 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](#)