

ENERGY WISE

YOUR SAN MIGUEL POWER MEMBER NEWSLETTER

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In the event of a power outage, contact your local SMPA office. If it is after hours, you will be able to automatically transfer to our 24-hour dispatch.

QUESTIONS OR COMMENTS

Send your questions or suggestions for the editors of EnergyWise to:
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SAFETY TIP

February 1-7 is National Burn Awareness Week. Remember this: Scalds are the most common burn injury among children. Never carry or hold a child while cooking on the stove. Instead, place them in a high chair or other safe zone.

San Miguel Power Association is an equal opportunity provider and employer. If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cust.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W. Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program_intake@usda.gov.

NOTABLES: How A Cat's Whisker Helped Four Western Towns Save Thousands

Nucla, Naturita & Norwood Join Ouray with All LED Streetlight Deployment

The year was 1907. British engineer and experimenter, Henry Joseph Round sat hunched over a small, sturdy device that resembled a teeter-totter with a worn rubber handle on one side and thin, curved filament on the other. Although this device included no true organic parts, it had taken its name, the "cat's-whisker detector," from the appearance of that delicate, springy wire. As Round finished scribbling his notes, he turned to the device and gently lifted the wire, placing a small crystal beneath it.

It might have been just another day at the lab, another in the long series of unremarkable experiments necessary to improve the prototype technologies of the day. This day, Round was working on ways to improve the radio transmitter. He wasn't looking for what was about to happen next. But as he took up his pen, straightened his glasses, and closed the switch, he saw it. If he had glanced away a second earlier, he might have missed it, but he didn't, and now he couldn't ignore it. It was right there, where the whisker brushed--so gently--against the crystal... It was light!



Invented in 1904, the so-called cat's whisker detector was used to rectify the radio signal of crystal radios in the early twentieth century. It was one of the first electronic semiconductor devices ever made.

History records that H. J. Round discovered the "electroluminescent effect," a phenomenon in which excited electrons within a strong electric field, release energy in the form of "photons," or light when passed over certain semiconductors, like Round's silicon-carbide crystal. The discovery would become the basis of the Light-Emitting Diode, or LED.

As a practical lighting source, the LED light was rather slow to develop, relative to its predecessors. In the field of municipal

street lighting, for example, gas lights gave way to arc lights, which gave way to incandescents, which yielded to the high-intensity discharge lamps we have lining our streets today. All the while, the LED has been marking time as a little red indicator light, the glowing numbers on your alarm clock or as the back light to your digital watch. But the LED's ability to produce more light per watt of electrical power has always intrigued scientists, engineers and businessmen.

Years of research, experimentation and development have finally paid off. Today, there are a wide variety of LED street and yard light fixtures that compare favorably to their high-intensity discharge counterparts in almost every way. LEDs produce more light with less energy; they last longer; they require less maintenance; and they produce any color or softness of light that you desire with less extraneous light or light pollution. In short, they are the future of municipal street lighting.

This fact leads us to another story...

The year was 2011. The town of Ouray, Colorado, had heard that a new type of streetlight could cut their lighting energy use in half, while protecting residents' view of the night sky. They began looking for ways to overcome the LED's one drawback: a high up-front cost. Through partnerships with leading LED manufacturer, Cree®, the Governor's Energy Office, Tri-State Generation and Transmission (Tri-State), and their local electric cooperative, San Miguel Power Association (That's us!), Ouray replaced all 101 of their old Mercury Vapor lamps with Cree® LEDway streetlights. They had made history as the first city in Colorado to install all LED streetlights, and have been enjoying the benefits ever since.

By 2015, the LED streetlight had not only come down in price, but had continued to improve its performance. San Miguel Power Association (SMPA) Key Accounts Executive, Paul Hora stated, "LEDs have really come a long way in the industry. They have reached the point of emitting 100 Lumens or more per Watt," (as compared to the Mercury Vapor's 60 - 75 Lumens per Watt). After the success of the Ouray project, other

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RENEWABLES IN THE MIX

There's certainly a buzz in rural circles these days about renewable power. Twenty-nine states and the District of Columbia have already passed laws creating renewable portfolio standards, often called RPS for short, which require electric utilities and other retail suppliers of electricity to add a specific percentage of renewable energy to their power supply mix by a certain date.

But what exactly are renewables and why are governments so eager to incorporate them into America's power supply? The term "Renewable Energy" is defined by the International Energy Agency as "Energy derived from natural processes (e.g. sunlight and wind) that are replenished at a faster rate than they are consumed." Solar, wind, geothermal, hydro, and some forms of biomass are common sources of renewable energy. Two major advantages of renewable sources of energy are that they cannot get used up (within the foreseeable future) and that they produce energy without generating harmful byproducts or pollutants. Of course, renewables also present challenges like intermittent generation

and the additional expense of collecting and incorporating the electricity they produce.

Still, Rural America boasts a rich abundance of renewable resources and many believe that harvesting that potential will be worth the effort in the long term. Because most renewable energy projects take root in rural America, electric co-ops like San Miguel Power Association (SMPA) are at the forefront of this new and exciting wave of generation technology. Currently, co-ops like us, who distribute power from wholesaler, Tri-State Generation and Transmission, incorporate an average of 5 percent more hydro and other renewable resources, than the industry as a whole.

That power includes energy from Colorado-based federal and small hydro projects, a large scale wind farm, and even a hog methane biomass facility. All of this energy feeds directly into the electronics and appliances in your home. But our inclusion of renewable energy doesn't stop there. SMPA also distributes power from five local renewable generating plants, including

hydro units in Ouray, Coal Creek pass and Telluride as well as the 1-megawatt solar array in Paradox. The power generated at these local facilities also contributes to the power you use every day.

Even though cooperatives are leading the nation in renewable energy, very few of them can claim a level of renewable inclusion that matches SMPA. In fact, SMPA's annual use of renewables beats both the nationwide average and the rural electric cooperative average. As an SMPA member, you can take pride in this fact, but you don't have to stop there.

Through SMPA's Green Blocks program, you can offset your own home's non-renewable power use through the purchase of Renewable Energy Credits (RECs), or if you are interested in supplementing your home's energy supply directly, you may be interested in becoming a net-metered member. SMPA will be there to help you with this too. However you look at it, renewable energy sources serve an increasing need in our world today and SMPA is proud to be a part of it.

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towns in the SMPA territory began to show interest.

In response to requests from the towns of Nucla, Naturita and Norwood, SMPA went to work building a program through which these communities could access the savings and benefits of LED street lighting. "We selected a good lamp from a reputable company that would meet a variety of needs," said Hora. "It's essentially a barn / area / rural roadway light that is easy to install and maintain; it emits an amount of light that

some lights; we had to get financing in place; we had to get approval from the town boards. Then we had to order the lights, and do a one-for-one swap-out of all the old fixtures."

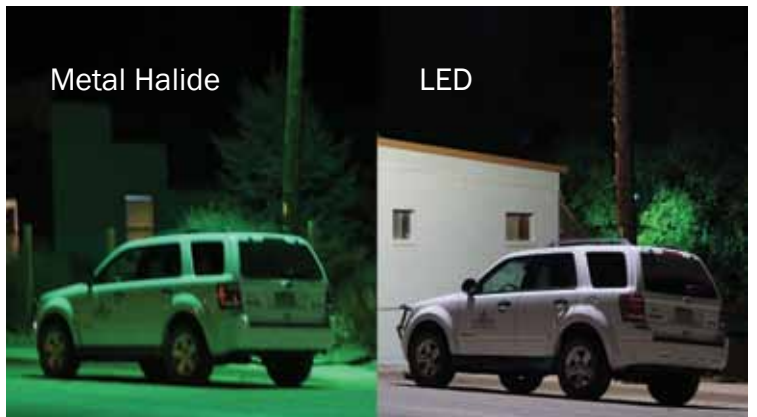
Now, the year is 2016. And something is different in the Western Colorado towns of Nucla, Naturita and Norwood. It's strange to think that an accidental discovery in a lab in England over a hundred years ago could have sparked the change. But when one considers the curiosity, the ingenuity,

Interested in reducing your "carbon footprint?" There are national companies that can guarantee that your home's energy use is offset by qualified renewable energy production. But San Miguel Power Association's "Green Blocks" does the same thing while making a more local impact. 1) SMPA is non-profit: While most national companies are still profit-driven, SMPA puts 100% of your Green Blocks purchase toward the renewable energy you intend to buy. 2) Money stays local: Better movement, and the local economy is notified, and the local economy is notified, and the local economy is notified. Consider supporting that cause directly. Better movement, and the local economy is notified, and the local economy is notified, and the local economy is notified.

Local: Green Blocks charges no additional fees, so that amount stays here on the Western Slope. 3) Support Renewables Here: You don't need a national company to support your favorite cause. yet, participate in SMPA's Green Cents program, which supports local renewable projects. 4) Green Blocks give you a voice: When you invest in Green Blocks, that investment gets toward green energy gains momentum. Green Blocks: a local way to make a difference.

www.smpa.com
Renewable Energy—Green Cents / Green Blocks

LED light comparison on E. Main St. in Naturita, CO. This photo captures the significant difference in color rendering between traditional light source and an LED. No photo manipulation was performed on these images.



is comparable to the lights it is replacing and it allows us to take advantage of rebates offered by our power wholesaler, Tri-State."

With the new program in place, the goal was to complete installation by the end of the year. "That was a real challenge," said Hora, who began his employment at SMPA in September. "We had to pilot

the perseverance, the vision, and the energy of the people involved. It should come as no surprise that every light that shines down on the streets of these towns is now an LED light. This will help them save thousands of dollars in energy costs over the lifetime of the lights. And after a pause to reflect upon this, one is left with only one question: "Who's next?"