



# Case Study: Advanced Automotive and Truck Repair

By Suzie Romig/CLEER Correspondent



## Businesses Eligible for Assistance Through Lighting Efficiency Rebates

When auto mechanic John Slife climbs under the wide hood of a tall 4×4 pickup to change 16 sparkplugs, he needs to be able to see what he's doing to do his job well.

These days, Slife is using his portable work light a lot less, which is a good thing for employee productivity at Advanced Automotive and Truck Repair in Rifle.

The mechanics and other employees are enjoying improved lighting quality in the 5,000-square-foot repair shop following a complete overhaul of light fixtures and bulbs.

"It's made a big difference," said Slife, while cranking a wrench. "It's a lot brighter with less shadowed areas," agreed fellow technician Dan Rohan. "It's easier to see things, even underneath the vehicles. Anytime we can see something better, it sure helps to get the job done easier."

### The Upgrades

- Lighting was upgraded with more efficient ballasts and bulbs
- Shiny reflector bonnets to direct light
- Additional windows

Shop owner Ken Kimberlin learned about potential rebates for efficiency upgrades from program manager Rob Morey of nonprofits GCE/CLEER. With this "energy coaching" assistance Ken was able to take advantage of rebate programs available through the local Clean Energy Challenge for Business program and the Xcel Energy Small Business Lighting program. The first step to determine the most cost effective and efficient upgrades was a free lighting audit through Xcel. (Information is available at [www.xcelenergy.com/lightingefficiency](http://www.xcelenergy.com/lightingefficiency).)

Kimberlin upgraded all the light fixtures in the shop and office from inefficient T-12 magnetic ballasts to efficient T-8 or T-5 electronic ballasts with fluorescent tubes. Lights along the shop walls now utilize shiny reflector bonnets to direct light on the vehicles. Occupancy lighting sensors also were added to restrooms.

Inside the office, Ken's wife and office manager Karen Kimberlin said she has not endured one of her frequent migraine headaches since the lighting was updated in mid-March. Both Ken and Karen said



Technician Dan Rohan finds that the improved work table and shop lighting adds to job productivity. Photos by Suzie Romig

they are experiencing less eye strain, and Ken is wearing his reading glasses less. The previous lights were dimmer and flickered more.

"It's so much brighter in here; it

### Lessons Learned

- The more efficient lighting makes the shop more appealing and has improved worker productivity
- Energy audits are key to identifying specific upgrades
- Specialized equipment (e.g., the waste oil furnace) can use unwanted byproducts
- Simple things, like painting the roof white, can trim energy use



*Left: Office manager Karen Kimberlin said she has not suffered a migraine headache since the formerly flickering lighting was upgraded in the spring.  
Right: Mechanic John Slife, working under the hood of a 4X4 pickup, is using a portable work light much less now that the repair shop lighting was retrofitted.*

was unbelievable. It's a sizeable improvement," Ken Kimberlin said, reading a part number in small print.

The cost of the project completed by a local electrical contractor was \$5,368, which was offset by \$2,734 in rebates through Garfield Clean Energy and \$1,560 in rebates from Xcel. Kimberlin said his electrical bills for the five months of April through August 2011 show savings of 2,559 kilowatts and \$224 compared to the same timeframe in 2010.

The shop owner said a contributing factor to the timeliness of his lighting upgrades is the ongoing U.S. Department of Energy phase out of inefficient magnetic ballasts. U.S. manufacturers stopped producing the most commonly used T-12 magnetic ballasts as of July 2010, and the production of most T-12 bulbs will stop by July 2012.

The owner's future energy efficiency plans include installing solar tubes in the shop ceiling for free light when the sun is shining

and replacing deteriorating swamp coolers with high efficiency models. He hopes to take advantage of cooler

"I would definitely go through an energy audit and see what can be done. It only makes common sense to do everything you can, unless you have money to throw away."

—Ken Kimberlin,  
Advanced Automotive  
and Truck Repair

rebate information and energy coaching expertise once again through Garfield Clean Energy. More information is available at [www.GarfieldCleanEnergy.org](http://www.GarfieldCleanEnergy.org).

Kimberlin has tried to make his business as energy efficient as possible. He added windows to the two garage doors for increased light.

The building roof has always been painted white to reflect the western Colorado heat, and since it opened, the shop has utilized a waste oil furnace to make use of spent vehicle fluids onsite in an EPA-approved, efficient furnace. Four years ago, Kimberlin upgraded the furnace to a more efficient model.

He encourages other small business owners to look into energy-saving upgrades and rebates.

"I would definitely go through an energy audit and see what can be done," Kimberlin said. "It only makes common sense to do everything you can, unless you have money to throw away."

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