

### A PROFITABLE INVESTMENT

Some Wisconsin dairy operations are choosing to employ long-day lighting practices or photoperiod control in their barns. Studies have shown that the process of exposing cows to supplemental light during the short days of fall and winter can increase milk production by between 5 percent and 16 percent (four pounds to five pounds per day per cow). Focus on Energy encourages the use of energy efficient lighting and is offering incentives, when qualifying lighting equipment is installed.

### THE RIGHT LIGHT

Most of the experiments with long-day lighting have provided supplemental light extending the fall/winter/spring days (September-March) to 16 to 18 hours of light per day, followed by 6 to 8 hours of continuous darkness. This pattern should be followed consistently with an average light intensity of 15 foot-candles at cows' eye level and a minimum of 10 foot candles at the darkest location. In a conventional barn, this can best be achieved by installing sealed and gasketed T8 fluorescent light fixtures that conform to National Electric Code 547. For a freestall facility, sealed pulse start metal halide or sealed high pressure sodium lamps work best. Sealed T8 fixtures, pulse start metal halide and high pressure sodium lamps will provide longer bulb life and use less energy than other lighting technologies. Ask your lighting contractor or dairy consultant about light intensity recommendations for other barn locations.

### SAVE MONEY WHILE YOU INCREASE MILK PRODUCTION

- Converting from eight foot T12 to T8 high-performance fluorescent lights will save approximately 400 kWh, or \$40 per year, per fixture! Install 25 fixtures and save \$1,000 per year.
- Install dusk to dawn pulse start metal halide fixtures instead of mercury vapor fixtures. Each pulse start metal halide fixture puts out roughly twice as much light as the same wattage mercury vapor lamp. This means you can use fewer fixtures and save energy. Use a 150 watt pulse start metal halide lamp in place of a 250 watt mercury vapor lamp. You will get more perceived light, save 736 kWh each year and save \$74 per year per fixture. Install 25 fixtures and save \$1,850 per year.
- Installing pulse start metal halide versus a standard fixture results in approximately 360 kWh savings, or \$36 per year per fixture! Install 20 fixtures and save \$720 per year.

STANDARD LIGHTING INCENTIVES	
Two lamp four foot high-performance T8	\$5
Three lamp four foot high-performance T8	\$7
Six lamp high bay fluorescent high-performance T8	\$60
Sealed pulse start metal halide fixtures--320W	\$25

### HOW WE CAN HELP

Focus on Energy provides:

- Information on available technologies
- Assistance in calculating potential energy savings
- Help in locating contractors who can assist in implementing your project
- Implementation grants and incentives to help offset installation costs

### CASH INCENTIVES

Purchase and install qualifying lighting equipment and receive an energy efficiency incentive. It's easy; just call a participating contractor, which you can locate on the Focus on Energy Web site, [focusonenergy.com](http://focusonenergy.com), or by calling Focus on Energy at 800.762.7077.

### CUSTOM INCENTIVES

Focus on Energy's Agriculture and Rural Business Program also offers services and resources to farms undertaking milking parlor retrofit projects, new milking parlor designs and other energy efficiency projects. We can recommend energy efficient lighting, that may qualify for a custom grant. Grain drying operations, freestall ventilation, livestock housing and irrigation equipment also may qualify for the program.

For more information about long-day lighting or other energy efficient opportunities on your farm, contact Focus on Energy at 800.762.7077 and ask to speak with an Energy Advisor from the Agriculture and Rural Business Team. Or visit our Web site at [focusonenergy.com](http://focusonenergy.com).

### ADDITIONAL REFERENCES

Energy-Efficient Agriculture Lighting, A3884-14, Scott Sanford, University of Wisconsin-Extension, Madison, WI 2004.

Wisconsin Energy Efficiency and Renewable Energy, [www.UWEX.edu/Energy/](http://www.UWEX.edu/Energy/)

Energy savings calculations based on \$.10 per kWh.

For more information call 800.762.7077 or visit [focusonenergy.com](http://focusonenergy.com)