



City Council Meeting Date: October 4, 2005

TO: Gary Keefe, City Administrator

**FROM: Mary Kammer, Utility Conservation Coordinator
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SUBJECT: REBATE INCENTIVE TO PURCHASE ENERGY EFFICIENT HOLIDAY LIGHTS

RECOMMENDATION:

Staff recommends that the City Council authorize the expenditure of \$6,000 in public benefit funds for a rebate incentive for the purchase of LED Holiday lights, to be charged to account number 52530-57202, entitled Energy Efficiency Incentive Services. The money will provide from 750 to 1500 rebates. The funds are to be appropriated from the Public Benefits Reserve.

BACKGROUND:

In May of 2001 City Council appropriated \$575,600 to provide rebates. Since then, an additional \$293,500 has been appropriated from Public Benefit Program funds to either augment existing programs or to create new programs. The monies provide the following cost-effective, electricity demand-side management services, to promote energy efficiency and energy conservation: refrigerator rebates and recycling incentives; gas conversion for electric dryers and water heaters; dishwashers and clothes washers; commercial lighting replacement ; and solar system installation rebates.

Holiday lighting and white mini lights used outdoors throughout the year have become a big part of our holiday celebrations and decorative lighting. As the holiday season approaches, more and more strands of lights are used on trees, bushes, and houses. Fortunately, as the use of these decorations has increased, new lighting technologies have decreased the amount of energy needed to operate the lights.

Light Emitting Diode (LED) technology is now available for decorative strands of lights. The LED lights come in a variety of styles and colors that look like the high energy consuming strands. These LED holiday lights will be available in at least three stores in Lompoc. They are also readily available 'on line' and through catalog sales.

The advantages of the LED lights are:

- Energy-efficiency: A 70 light strand uses 3 watts operated with LED lights, compared with 420 watts operated with the older large C-7 incandescent lights and 32 watts operated with the mini incandescent lights.
- Long life span: The LED lights are projected to last up to 100,000 hours indoors and 50,000 hours outdoors. When one light burns out the rest remain lit.
- Safety: The bulbs are cool to the touch, regardless of how long they are left on.
- Less vandalism: The epoxy lenses coving the lamp are more durable.
- Peak Load Reduction: Lompoc reaches peak electric demand in December said to be when most of these lights are in use.

The disadvantage of these lights is the cost and less light. One store in Lompoc plans to sell a 35 light strand at prices ranging from \$13.99 to \$25.99. The cost will depend on the color and style of lamp cover.

DISCUSSION:

If a rebate of \$4.00 for the purchase of a 35 light strand, or \$8.00 for a 70 light or 150 light icicle strand is available to customers providing (1) the UPC code, (2) a receipt, and (3) the end tab of the box (and limited to 5 rebates per customer), then 750 to 1500 rebates will be available using the requested \$6,000.

If an 8-foot tree is decorated with four LED 70-bulb strings, operated for 6 hours per night for 35 nights, the energy usage would be 2.5 Kwh. If the same tree is decorated with four mini light 70-bulb strings operated for the 210 hours, the energy usage would be 26.5 Kwh. If the tree is decorated with four C-7 incandescent 25-bulb strings for the same hours, the energy usage would be 126 Kwh.

Below is a chart summarizing the energy saved by converting to LED for the above example:

Light Type	Incandescent C-7	Mini light	LED light
Wattage of bulb	6	.45	.043
Number of bulbs	100	280	280
Energy use	600W	126W	12W
Kwh (210 hours)	126Kwh	26.5Kwh	2.5Kwh
Energy saving with LED	104Kwh	24 Kwh	
\$ cost of electricity saved –average residential customer	\$11.75	\$2.80	

If we assume that 1,000 LED strings are purchased instead of mini light strings, and 250 strings are purchased instead of C-7 strings, the total energy saved over a ten-year period would be 500,000Kwh. The 500,000Kwh over a ten-year period will save the City 390Kw peak demand, and \$45,500 in purchased power, based on \$.091 per Kwh. The \$6,000 cost to save this energy is estimated to be \$.012 per Kwh.

SUMMARY:

Light Emitting Diode (LED) technology used for holiday lights provides an energy efficient choice for holiday decorative indoor and outdoor lighting. A rebate to encourage the use of this technology for holiday lighting meets the needs of City electric customers and meets the Public Benefit requirements of AB1890(1996). Providing rebates for the purchase of these lights is beneficial to both the customer and to the City's goal of load reduction.

Mary Kammer, Utility Conservation Coordinator

APPROVED FOR SUBMITTAL TO THE CITY ADMINISTRATOR:

James Beck, Utilities Director

APPROVED FOR SUBMITTAL TO THE CITY COUNCIL:

Gary Keefe, City Administrator