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Cutting Edge Lighting Research Reaching the Market in 2004

California's publicly funded PIER Lighting Research Program will introduce innovative new energy and cost saving lighting products to California consumers in 2004!

Sacramento, CA – In lighting labs across the country, researchers are hard at work developing and testing new products to improve the efficiency of lighting in California. The Lighting Research Program (LRP), funded in 2002 under the California Energy Commission's Public Interest Energy Research (PIER) Program, supports a broad portfolio of lighting products, including lighting control systems for classrooms and offices, compact fluorescent table lamps and downlights for homes, and a whole class of first generation LED products.

The two-year, \$5.2 million program has brought together researchers from Lawrence Berkeley National Laboratory (LBNL), the Lighting Research Center in New York, and a diverse group of manufacturers from California, New Jersey, New York, and Illinois. The LRP also includes an innovative, centralized approach to market connection, helping researchers and manufacturers integrate knowledge of the California marketplace into their product designs. The program is managed by Architectural Energy Corporation.

"When we first proposed this program, we knew we would be breaking new ground. No other PIER program has previously integrated such a large array of research and manufacturing partners so closely," said Commissioner Art Rosenfeld, presiding member of the Energy

Commission's research and development committee. "A year and a half later it's exciting to see this approach producing valuable results."

Already in 2003, The Watt Stopper of California and LaMar Lighting of New York successfully introduced new products into the marketplace as a result of LRP work. The Watt Stopper's Motion Sensor Nightlight has shown significant energy savings by reducing the number of hours that bathroom lights are left on in hotel rooms. The product uses an LED light to provide sufficient night lighting so hotel occupants can find their way to the bathroom at night. An occupancy sensor turns off the main light whenever the bathroom is not in use. Retrofitting all of California's 350,000 hotel rooms would realize savings of more than 20,000 megawatt-hours per year, or enough energy to power 3,000 average California homes.

LaMar's Occusmart fixture saves energy by reducing stairwell light to code-minimum levels when the stairwells are unoccupied. Besides the energy savings gained from reduced lighting, the bi-level light fixture promotes stairwell safety by providing more light when the stairwells are in use. With the increased sensitivity to issues of safety in stairwells, building owners can increase the total light available to occupants and at the same reduce total energy consumption.

"The Lighting Research Program has helped in the development of our stairwell product for California," says LaMar President Jeff Goldstein. "In addition, with four demonstration sites in the state, we are able to evaluate the performance of our product and make improvements when necessary. With PIER's research we are able to supply the best, most energy efficient product possible."

Finelite, Inc. of Union City, California, has developed an integrated classroom lighting system that combines high-performance T8 lamps, properly tuned electronic ballasts, and reflectors coated with a new 96% reflective paint. The Series 10 PCS (PIER-style Classroom System) has reduced energy use in demonstration classrooms to half of what current regulations allow. If adopted by twenty percent of the schools in California, the new system could save schools over \$20 million a year in electricity costs and conserve 176,000 megawatt hours of electricity per year, equivalent to the power used annually by 26,000 average California homes. The project also includes a "one-stop" warranty and integrated controls to simplify and speed the design process, making it a cost-effective solution for cash-strapped schools looking to lower

construction and operating costs. The system uses direct-indirect luminaires and special audio/video controls that allow a teacher to easily set the classroom lighting for different needs.

Beginning this spring, the first of four brand-new ENERGY STAR® lamps will be available to California homeowners. All of these lamps will use pin-based CFLs. Developed by four different manufacturers—American Fluorescent, Fire & Water, Maxlite, and PowerLux— these lamps will be available from suppliers such as Home Depot and Lowes for hotels, small offices, and homes as alternatives to inefficient torchieres and incandescent table lamps.

In late 2004 Lithonia Lighting will release a fluorescent downlight system developed by LBNL for new home construction and a remodel kit for existing homes. This project will also be available for commercial downlight installations.

Also, in the commercial and institutional market, LBNL is developing a hybrid exterior luminaire that combines an LED array for ambient light and a traditional incandescent lamp triggered by a motion sensor to provide full illumination. This hybrid luminaire encourages safety at a lower cost than comparable solutions that include only a motion sensor.

Products developed in the PIER Lighting Research Program will be featured at the Lightfair International Conference and the Hospitality Design Expo, both in Las Vegas. In June, products will be featured at the West Coast Energy Management Congress in Anaheim and in August, LRP products will also be featured in a product showcase and a number of presentations at the Alliance for an Energy-Efficient Economy's (ACEEE) 2004 Summer Study.

In addition to product development, the LRP also funds applied research focused on the successful adoption of energy-saving technologies. This research includes measuring the performance of new HID electronic ballasts to help develop advanced controls strategies, supporting the establishment of industry standards for the DALI communication protocol, and developing and testing load-shedding technologies.

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Detailed information on the specifications guiding each of these projects is publicly available through PIER's Lighting Research Program. Visit the Lighting Research Program's web site at www.archenergy.com/lrp. For information about the PIER program, please visit the California Energy Commission web site at www.energy.ca.gov/pier. You can also contact Bret Logue at BKi, 510-444-8707 x 209 or Percy Della at the California Energy Commission, 916-654-5027.

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