

L Prize Competition

James R. Brodrick, Ph.D.
U.S. Department of Energy

July 9-11, 2008

Portland, Oregon

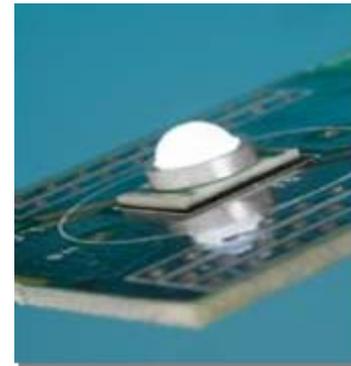
Transforming the Lighting Landscape

- Created by Energy Independence and Security Act (EISact 2007) Sec. 655
- Focus on two replacement technologies:
 - 60 W Incandescent
 - PAR 38 Halogen
- Future focus: 21st Century Lamp
- Cash prizes, opportunities for federal purchasing agreements, utility programs, other incentives
- Opportunity to save significant energy and greenhouse gas emissions

The logo for L•PRIZE™ features the word "L•PRIZE" in a bold, sans-serif font. The dot in the "L" is a solid yellow circle. The word "PRIZE" is in a dark green color. A small "TM" trademark symbol is positioned to the upper right of the word "PRIZE".

Not “If” But “When”

- DOE R&D portfolio offers insight on LED industry advances, technology potential
- 51 current DOE SSL R&D projects



*“Cree achieves highest efficacy for a white power LED” [129 lm/W for cool white and 99 lm/W for warm white]
September 2007*

L Prize Launch at LIGHTFAIR

- Competition launch in May 2008 at LIGHTFAIR International in Las Vegas



Deputy Assistant Secretary David Rodgers (third from left) was joined by Jim Brodrick and energy leaders from four major California utilities working closely with DOE to support the L Prize competition.



Utility leaders, members of the media, and manufacturers learn details of the L Prize competition.

Partners Assist Competition Planning

- MOUs with DOE
- Valuable input to competition planning, requirements
- Assist in evaluation of proposed products
- Promote winning L Prize products



L Prize Competition Requirements

- Technical specifications to ensure compliance with 2007 energy legislation
- Additional details specified for
 - Quality
 - Performance
 - Mass manufacturing

Competition Requirements

60W Incandescent Replacement Lamp

- More than 90 lm/W
- Less than 10 Watts
- More than 900 lumens
- More than 25,000 hour life
- More than 90 CRI

PAR 38 Halogen Replacement Lamp

- More than 123 lm/W
- Less than 11 Watts
- More than 1,350 lumens
- More than 25,000 hour life
- More than 90 CRI

21st Century Lamp

- To be defined in a future L Prize Program Announcement

Energy Savings, Environmental Benefits

60 W incandescent replacement winner will use only 10 watts – a savings of 83%

PAR 38 halogen replacement winner will use less than 11 watts – a savings of 87%

If every socket converted to L Prize winning product, the U.S. will save **34.0 Twh of electricity** and avoid **5.6 million metric tons of carbon emissions**

If every socket converted to L Prize winning product, the U.S. will save **15.6 Twh of electricity** and avoid **2.6 million metric tons of carbon emissions**

Rigorous Product Evaluation

- **Performance and lifetime testing** conducted by independent laboratories
- **Field assessments** in collaboration with utilities and other partners
- **Stress testing** under extreme conditions
- Purpose:
 - Detect and address product weaknesses before market introduction
 - Avoid problems with long-term market acceptance

Independent Testing

- Photometric and electrical using LM-79-08 procedures
 - Luminous flux, intensity distribution, CCT, CRI, power factor
- Lifetime/lumen maintenance tests based on LM-80
 - Lumen maintenance
 - Color maintenance
- Stress testing
 - High temperature, humidity, frequent switching, voltage fluctuation, EMI



Field Assessments

- Installation in host customer facilities (homes, commercial spaces, outdoor locations) and utility technology demonstration facilities
- Focus group testing
 - Retailers
 - Builders
 - Consumers

Field Assessment

- Energy use
- Lighting system performance
- Reliability
- Customer acceptance
- Cost-effective deployment

Program Partners – What's In It For You?

- Confidence in performance, consistency
- Clear benefits to energy efficiency program partners
 - Lowers risk through thorough, intensive, reliable product evaluations
 - Saves you time and assures product quality – more quickly, more comprehensively
 - Surest, most effective route to big energy savings
- DOE lab testing, leading to partner field testing
- Selection and promotion of products worth backing

Program Partners – Product Promotion

- Product incentives paid directly to manufacturers or to consumers
- Collaborative marketing and promotion
 - Print, radio, TV, and online advertisement
 - Point of purchase information
 - Educational materials
 - Training
- Partnerships with local, regional, national retailers
- Demonstrations and promotions with
 - Local homebuilders
 - Commercial developers
 - Hospitality chains
 - Local government, schools, universities

Become a Program Partner

- DOE actively inviting energy efficiency program partners from other states and regions to join
- Nevada Power, Efficiency VT, others **joining the wave**



Contact lprize@pnl.gov for more details or visit the
L Prize booth here in Portland

Join the Wave!



For more information, see www.lightingprize.org