Voices for SSL Efficiency 2008
DOE SOLID-STATE LIGHTING MARKET INTRODUCTION WORKSHOP

July 9-11, 2008
Portland Marriott Downtown Waterfront
Portland, OR

_____*Wednesday, July 9, 2008*_____

12:00-4:30 Registration

1:00-4:15 TUTORIAL SESSION
This opening session provides a quick update on DOE market introduction activities, followed by a series of tutorials on LED technology basics, appropriate applications, and measuring LED performance.

1:00-1:30 **Introduction and Update on DOE Market Introduction Activities**
James Brodrick, U.S. Department of Energy
A brief overview of DOE pathways to market, including CALiPER testing, GATEWAY demonstrations, ENERGY STAR, Technical Information Network, and more.

1:30-2:15 **What is an LED Lighting System?**
Steven DenBaars, University of California, Santa Barbara
A look at how LEDs work, and how they differ from conventional light sources.

2:30-3:15 **Using LEDs to Their—and Your—Best Advantage**
Kelly Gordon, Pacific Northwest National Laboratory
Learn where and how solid-state lighting is best applied.

3:30-4:15 **Measuring LED Performance**
Mike Grather, Luminaire Testing Laboratory
Learn about LED measurement, and how it differs from traditional methods for measuring lighting performance.

Thursday, July 10, 2008

7:30-8:00 Continental Breakfast
Sponsored by Bonneville Power Administration

8:00-8:15 **Welcome & Opening Remarks**
James Brodrick, U.S. Department of Energy

8:15-8:45 **Keynote**
Alan Ruud, Beta LED
Insights on a lighting industry revolution – challenges, opportunities, and strategies for success

8:45-10:00 **SESSION 1: SOLID-STATE LIGHTING DEMONSTRATIONS**
This session offers an update on the DOE GATEWAY demonstration program, future plans, and ways to participate. Plus detailed results from recent installations and considerations for planning SSL demonstrations.

DOE GATEWAY Demonstration Program
Bruce Kinzey, Pacific Northwest National Laboratory
Session introduction and an update on current and planned GATEWAY demonstrations.

Results – Performance Data and Economics from the Oakland Street Lighting Demonstration
Tyson Cook, Energy Solutions
A look at performance data, economics, and user feedback from the GATEWAY demonstration of street lighting in Oakland, CA.

Considerations – Planning for SSL Demonstrations, From Casinos to Community Centers
Daryl DeJean, Emerging Technologies Associates, Inc.
A look at how decision-makers are approaching SSL demonstrations, key considerations and needs.

Discussion
Discussion of demonstration needs – what products are needed, what information is needed, and what demonstrations would you like to see?

10:00-10:30 Refreshment Break

10:30-12:00 **SESSION 2: ENERGY STAR® FOR SSL**
This session will offer details on the ENERGY STAR requirements for SSL products, including the process for product qualification, on-line submission, quality assurance, and marketing opportunities.

DOE ENERGY STAR Criteria for SSL
Richard Karney, U.S. Department of Energy
Session introduction and overview of the DOE ENERGY STAR criteria for SSL, including the approach and timeline.

Implementation – Product Qualification and Testing Requirements
Derek Greenauer, D&R International
A recap from the May ENERGY STAR SSL implementation workshop, with details on the product qualification process, testing requirements, quality assurance, and tools and resources for manufacturers and program sponsors.

Future Plans – Keeping Pace with Technology Advances
Jeff McCullough, Pacific Northwest National Laboratory
A look at how the ENERGY STAR SSL criteria will keep pace with rapid technology improvements, including expansion of Category A products and ratcheting of efficiency targets over time.

Discussion
The discussion segment will provide an opportunity for Q&A on implementation details, timing, and expectations for the first ENERGY STAR-labeled products.

12:00-1:00 Lunch
Sponsored by Energy Trust of Oregon, Inc.

1:00-2:30 **SESSION 3: LED MEASUREMENT**
This session provides an overview of the latest CALiPER test results and key trends, plus a detailed look at test methods for measuring SSL products.
Introduced by James Brodrick, U.S. Department of Energy

Testing Procedures – LM-79, LM-80, and More
Mike Grather, Luminaire Testing Laboratory
A detailed look at LED test procedures, how they are conducted, and why.

DOE CALiPER Program – The Latest Test Reports and Analysis
Mia Paget, Pacific Northwest National Laboratory
Snapshot of Round 5 test results and analysis of key trends.

Discussion
The discussion will provide an opportunity for Q&A on testing methods, CALiPER analysis, and trends, and will solicit feedback on additional information needs and ways to share results.

2:30-3:00 Refreshment Break

3:00-4:30 **SESSION 4: PRODUCT COMMERCIALIZATION ISSUES**
This session will look at understanding and overcoming barriers slowing widespread adoption of solid-state lighting.
Introduced by Fred Gordon, Energy Trust of Oregon

NGLIA/DOE Initiative on Product Quality
Fred Welsh, Radcliffe Advisors
An overview and discussion of results reporting recommendations developed by a joint government-industry task group, designed to forge greater consistency in industry reporting practices.

Building Bridges – Perspectives from the Lighting Designer Roundtable
Randy Burkett, Randy Burkett Lighting Design
A designer's perspective on SSL, including feedback from the lighting designer roundtable hosted by DOE, IALD, and IES, plus the DOE/IES Design Guide.

Environmental Study – Solid-State Lighting Life Cycle Analysis
Scott Matthews, Carnegie Mellon University
An overview of the proposed methodology and approach for a DOE study on "SSL Life Cycle Analysis," looking at energy and environmental aspects related to the manufacture, use, and disposal (or recycle) of SSL systems.

Discussion
The discussion will solicit feedback on the product quality recommendations, designer perspective, and life cycle study, plus input on additional information and tools needed.

5:00-6:30 Evening Reception
Sponsored by the Northwest Energy Efficiency Alliance

Friday, July 11, 2008

7:30-8:00 Continental Breakfast

8:00-10:00 **SESSION 5: NATIONAL TECHNOLOGY AND DESIGN COMPETITIONS**

A look at new national competitions that heighten awareness of high-performance solid-state lighting products, and ways to participate.

L Prize Competition

James Brodrick, U.S. Department of Energy

Learn about DOE's new technology competition, designed to spur manufacturers to introduce high quality, energy-efficient solid-state lighting products to replace the common light bulb.

The Role of Utilities in Leveraging the L Prize Competition

Gregg Ander, Southern California Edison

The role of utilities in shaping the L Prize competition, and the collective market pull of utility support for winning products.

Next Generation Luminaires

Ruth Taylor, Pacific Northwest National Laboratory

A look at the new Next Generation Luminaires competition, sponsored by DOE, IALD and IES, which will focus on recognizing high efficiency commercial luminaires.

Discussion

The discussion segment will provide an opportunity for Q&A on the new competitions and opportunities to participate.

10:00-10:30 Refreshment Break

10:30-12:00 **SESSION 6: GETTING STARTED**

This session will look at what utility and efficiency program managers can do now to prepare for high-performance SSL products.

Introduced by Marc Ledbetter, Pacific Northwest National Laboratory

Utility Perspective – Designing Early SSL Programs

Mary Matteson Bryan, Pacific Gas & Electric

David Alexander, Pacific Gas & Electric

A look at PG&E's program plans for solid-state lighting, including incentives for LED refrigerator case lighting and several products covered by the ENERGY STAR criteria.

Efficiency Program Perspective – Designing Early SSL Programs

Gabe Arnold, Efficiency Vermont

A look at Efficiency Vermont's incentive programs for outdoor lighting and downlights, plus test installations to evaluate the potential and performance of additional LED products.

Balancing Risks and Rewards – The Economics of SSL
Charlie Grist, Northwest Power and Conservation Council
Comparing SSL to traditional sources on the basis of performance, cost-effectiveness, and the unknowns.

Discussion
The discussion will cover critical questions about products and timing for programs and incentives.

12:00-1:00 Lunch
Sponsored by Puget Sound Energy

1:00-2:30 **SESSION 6: GETTING STARTED (continued)**

Utility Perspective – Investigating SSL Potential and Performance
Todd Starnes, Puget Sound Energy
A look at PSE's approach to fitting SSL into their program plans, and understanding the opportunities and limitations of SSL technology.

Getting Ready for the First ENERGY STAR Products
Jeff Harris, Northwest Energy Efficiency Alliance
What should efficiency programs be doing to get ready for the first ENERGY STAR products?

Templates for Your Demonstration Projects
My Ton, Pacific Northwest National Laboratory
Learn about DOE's GATEWAY Demonstration Checklist, a template for developing demonstrations and utilizing GATEWAY promotion opportunities.

Discussion
The discussion will cover issues and strategies for weaving solid-state lighting into existing program plans.

2:30 **Wrap-Up**
James Brodrick, U.S. Department of Energy