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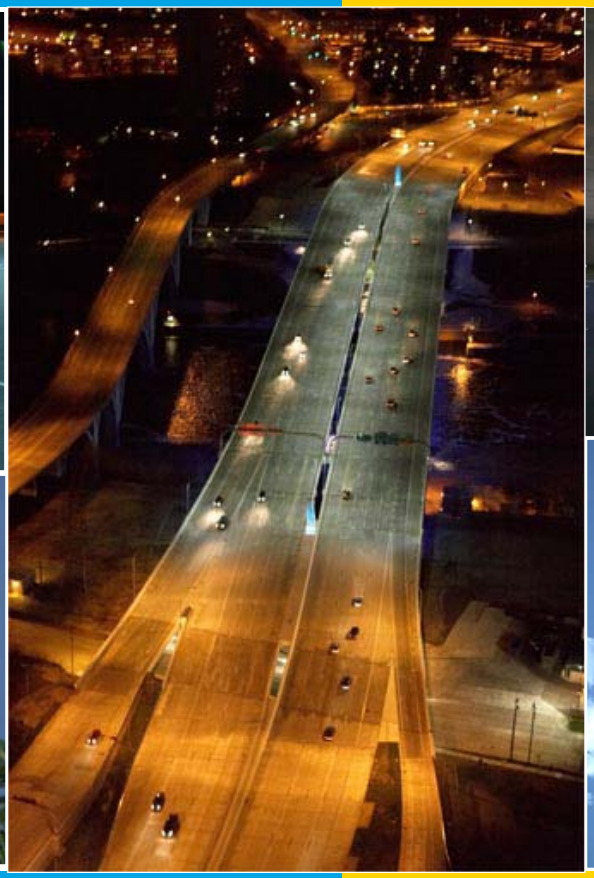

Federal Technology Deployment Pilot: Exterior Solid State Lighting

December 7, 2011

Jeff McCullough, LC

Pacific Northwest National Laboratory
Richland, Washington

FEMPs Exterior SSL Technology Deployment

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With support from FEMP, the USACE is developing a policy and implementation plan, including guidance materials, training, qualified product lists, and performance specifications in support of the widespread adoption of exterior SSL in the Federal sector.

Collaboration

Army Exterior SSL Policy Announcement

Support Resources

FEMP Designated Products

Outreach

Training

Webinars

Widespread deployment in Army and other agencies' facilities

Status Update

- Technical Assistance to Exterior SSL policy Development
  - Provide technical guidance to the USACE (and others) on a policy to standardize with SSL technology in exterior areas. (expected in Dec.)
  - Construction Standard Specifications
- FEMP-Designated Exterior SSL Performance Levels and Product list
  - Utilize DesignLights™ Consortium Qualified Products List (1/27/12)
- SSL Exterior Lighting outreach/education
  - Guides, training materials, field guides, fact sheets, etc.
  - Parking Garage and Parking Lot Webinars (1/24 & 1/25/12)
  - FEMP First Thursday presentation on exterior SSL, 2/02/12
- Federal Market Assessment for Exterior SSL
- Exterior SSL Website link for Federal users:
  - http://www1.eere.energy.gov/femp/technologies/solid_state_lighting.html

DesignLights™ Consortium

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SOLID STATE LIGHTING

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Technical Requirements Table v1.6

See a list of our category definitions here

Designlights™ Consortium Qualified Products List- Non-Residential Applications –
Submit any or all of the following product Information and Testing Results to Designlights for qualification **please make note that it is ONE per submission**
PDF Download

Application	Minimum Light Output	Zonal Lumen Density[2]	Minimum Luminaire Efficacy	Allowable CCTs (ANSI C78.377-2008)	Minimum CRI	L70 Lumen Maintenance	Minimum Luminaire Warranty
1) Outdoor Pole/Arm-Mounted Area and Roadway Luminaires	1,000 lm	=100% 0-90°, <10% 80-90°	60 lm/W	≤5700K	50	50,000 hrs	5 years
2) Outdoor Pole/Arm-Mounted Decorative Luminaires	1,000 lm	≥65%: 0-90°	40 lm/W	≤5700K	50	50,000 hrs	5 years
3) Outdoor Wall-Mounted Area Luminaires	300 lm	=100% 0-90°, <10% 80-90°	60 lm/W	≤5700K	50	50,000 hrs	5 years
4) Bollards	500 lm	<15%: 90-110° 0%: >110°	35 lm/W	≤6500K	50	50,000 hrs	5 years
5) Wall-wash Luminaires	575 lm	≥50%: 20-40°	40 lm/W	2700K, 3000K, 3500K, 4000K, 4500K, 5000K	50	50,000 hrs	5 years
6) Parking Garage Luminaires	2,000 lm	≥30% 60-80°, ≤25% 70-80°	60 lm/W	≤5700K	50	50,000 hrs	5 years
7) Fuel Pump Canopy	2,000 lm	≥40%: 0° to 40°; ≥40%: 40° to 70°	70 lm/W	≤5700K	50	50,000 hrs	5 years

http://www.designlights.org/solidstate.about.php

Internet | Protected Mode: On | 100%

Resources Available Now

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FEDERAL ENERGY MANAGEMENT PROGRAM

A FEMP Outdoor SSL Initiative

Resources for Outdoor SSL Applications

LED lighting installed in the parking garage of the Frances Perkins Building, U.S. Department of Labor headquarters, Washington, D.C.

Outdoor Solid-State Lighting in the Federal Sector

The Federal Energy Management Program (FEMP) is encouraging Federal agencies to accelerate the thoughtful application of outdoor solid state lighting luminaires. The FEMP Outdoor SSL Initiative offers a unique opportunity for the Federal sector to lead a large-scale implementation effort focused on an SSL application that is ripe for near term implementation through a process that recognizes the technology's potential, as well as its challenges. This initiative is intended to help Federal energy managers overcome the widespread misinformation they are encountering, learn about this technology and its unique attributes, and provide the tools needed to make good decisions that result in cost effective energy savings, and good quality lighting.

As part of this initiative, FEMP will leverage existing SSL outdoor tools and materials, and will develop new ones as needed to meet the unique needs of Federal agencies. This paper provides an overview of existing outdoor SSL resources developed by the US Department of Energy's SSL Program and other Federal initiatives including:

- SSL Street/Roadway Lighting
- SSL Site (Parking Lot/Garage) Lighting
- General SSL Resources

Street/Roadway Lighting

A variety of resources are available for facility managers interested in pursuing SSL street and roadway lighting, including DOE SSL GATEWAY demonstration project results, a Fitted Target Efficacy Calculator, and DOE CALiPER test results.

Municipal Solid-State Street Lighting Consortium Fact Sheet – The Consortium shares technical information and experiences related to LED street and area lighting demonstrations. The Consortium also serves as an objective resource for evaluating new products on the market intended for street and area lighting applications.

http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/consortium_fs.pdf

DOE SSL GATEWAY Demonstration Project Results – DOE GATEWAY demonstrations showcase high-performance LED products for general illumination in a variety of commercial and residential applications. Demonstration results provide real-world experience and data on state-of-the-art solid-state lighting (SSL) product performance and cost effectiveness. The following studies have been completed on Street/Roadway lighting:

- ***LED Roadway Lighting: Palo Alto, California***
  Assessment of energy, economic, and performance impacts of replacing high-pressure sodium street lights with LED and induction street lights.
  http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/gateway_palo-alto.pdf

According to the U.S. Department of energy, no other lighting technology offers as much potential to save energy and enhance the quality of our building environments, contributing to our nation's energy and climate change solutions.

http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/dec2010_guiding-market_factsheet.pdf

- ***LED Street Lighting: Lija Loop, Portland, OR***
  Analysis of the energy and performance impacts of replacing eight high-pressure sodium street lights on one residential street with LED luminaires.
  http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/gateway_lija-loop.pdf
- ***LED Roadway Lighting: I-35W Bridge***
  Analysis of Phase 1 results, completed in September 2008; Phase 2 involves long-term monitoring to evaluate lumen depreciation, physical effects, and performance impacts over time.
  http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/gateway_i-35w-bridge.pdf

continued >

Street/Roadway Lighting

- Municipal SSL Consortium
  - Performance Specification
- DOE SSL Gateway Demos
- CALiPER test Results

Parking Lot/Structure Lighting

- DOE SSL Gateway Demos
- CBEA Performance Specs
  - Lot and Structure Lighting

General Resources

- DOE SSL Program

Design Lights Consortium

- Qualifying Products Lists

Action Items

Please provide…

- Case studies documenting performance of exterior SSL installed at Federal sites
  - We have some posted on the FEMP website, but need more
- Data sets that can be used to help characterize the installed base of exterior lighting at your facilities.

Questions

Jeff McCullough
Pacific Northwest National Laboratory
jeff.mccullough@pnnl.gov
(509) 375-6317