

SEAD

Super-efficient Equipment and Appliance Deployment SEAD Initiative
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SEAD Street Lighting Procurement Toolkit Overview

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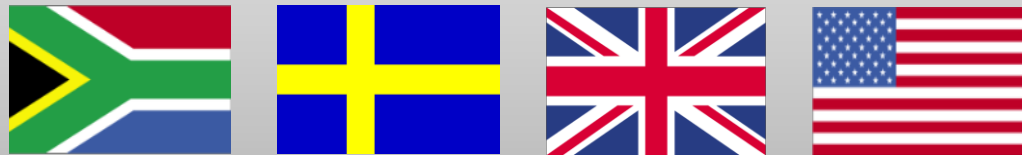
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SEAD Procurement

- Bulk procurement by governments and institutions is one of several ways to increase demand and “pull” super-efficient products into a market

SEAD Procurement Working Group Participants



SEAD Procurement Tools

- SEAD tools and resources inform large institutional purchasers of the benefits of energy efficiency
- Product categories have been selected for tool development based on energy savings potential, SEAD government interest, and the availability of other calculators and procurement tools
- Tools have been developed for street lighting and interior lighting
- Purchaser guidance documents have been developed for computers and monitors

Street Lighting Tool Overview

- Objective: Reduce energy consumption from street lighting by increasing government procurement of energy efficient products
- Target audience: Street lighting project managers in municipal government



Goals

- Facilitate evaluation/comparison of energy consumption and life cycle cost for street lighting products, including conventional high pressure sodium and metal halide fixtures and LED alternatives
- Provide a simple user interface and step-by-step instructions to enable use by non-experts
- Deliver results that can be used for first-order, initial assessments (not intended to replace expert consultation)

Scope

- Developed in Microsoft Excel for broad accessibility
- Guidance and advice are included in the tool
- Evaluation options include:
 - Retrofit and new installation scenarios
 - Generic or specific fixtures
 - Conduct scenario comparison or scenario optimization
- Outputs include:
 - Annual energy consumption
 - Minimum, maximum, and average illuminance
 - Life cycle cost
- Available for free download on www.superefficient.org

Inputs

- Fixture types & specifications
 - Several fixtures are pre-loaded – others can be added based on IES data files
 - Users can build a large library of possible fixtures
- Road geometry
 - Straight, flat road sections
 - 2, 4, or 6 lanes (with custom lane and median width)
 - Single-side, staggered, or median-mount poles
 - Custom pole height, spacing, setback distance
- Target illuminance
- Electricity rate, installation costs, and other local data

Inputs

Road Geometry

← Back to Inputs

Description:	Baseline	Upgrade	Units
Road Geometry			
Number of Lanes	4	4	lanes
Lane Width	3.5	3.5	meters
Shoulder Width	1	1	meters
Median Width	1	1	meters
Light Geometry:			
Pole Placement	Staggered	Staggered	
Pole Height	10	10	meters
Pole Spacing	30	30	meters
Pole Setback	2	2	meters
Arm length	3	3	meters
Light Grid:			
Number of Points in Grid	10	10	
Spacing of Grid	3.00	3.00	meters
Fixtures/km	33	33	

Baseline Road G

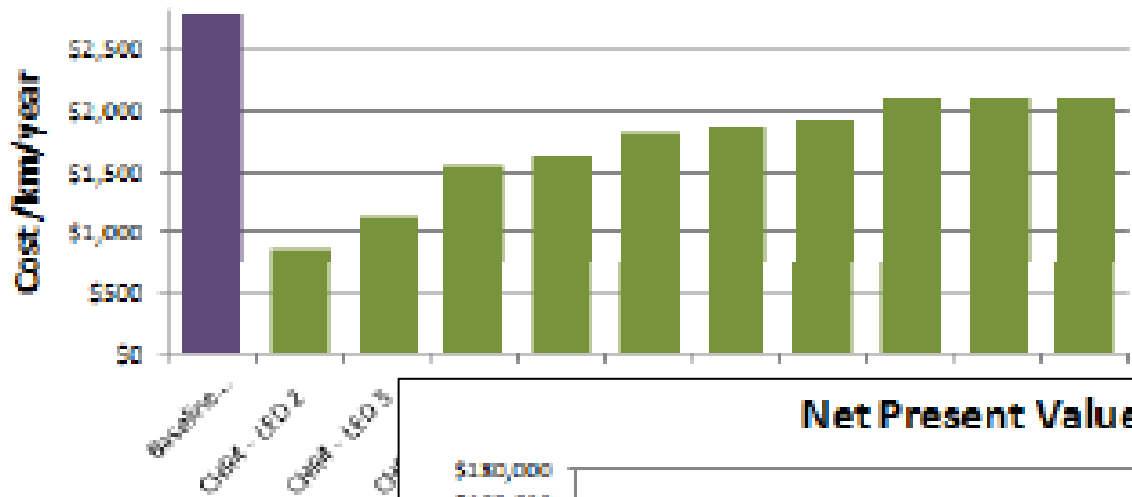
Upgrade Road G

Outputs

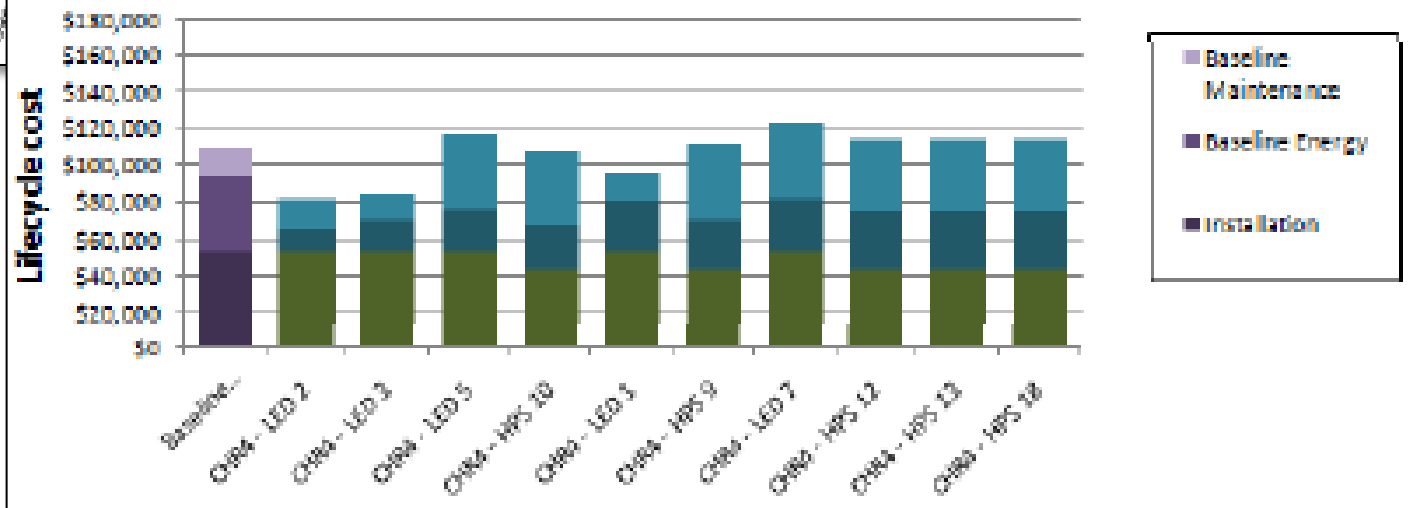
- Compare baseline and one or more upgrade scenarios
- Evaluate savings potential from efficient options
- Evaluate product performance claims
- Calculations are based on the Illuminating Engineering Society of North America (IESNA) calculation method, with simplifying assumptions

Outputs

Annual Energy Cost



Net Present Value - Lifetime Cost



Outputs

- Results are a first pass at identifying fixtures that are likely to provide the best energy performance for a specific scenario
- Results should not be used for verifying compliance with standards
- Output is not intended to replace a full lighting design by a qualified professional

What's Next?

- Interested parties should download the tool and provide comments
- SEAD governments, including BEE, will begin promoting the tool to prospective users in 2012
- Promotional activities include:
 - Identify audiences
 - Develop white paper, fact sheet, and press release
 - Prepare a promotional video
 - Prepare a training webinar

Contact

- Visit the SEAD website at www.superefficient.org to download and evaluate the tool
- Contact with any questions or comments:
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