Related Online Resources:

**Advanced Lighting Guidelines**
The Advanced Lighting Guidelines are currently only available as a Web-based publication, by subscription. The Guidelines are a comprehensive guide to energy-efficient lighting technologies, products, and best practices. Topics include a Luminaire Directory, Light & Vision, Health & Performance, Lighting Controls, Luminaires and Distribution, Daylighting, and Design Considerations.
http://www.algonline.org/

**Building Energy Software Tools Directory. Lighting Systems**
This Department of Energy software directory describes over 30 software tools that are useful for lighting design. Each entry contains a summary description of the software application, user level, computer platform, input/output components, strengths and weaknesses, and contact information.
http://apps1.eere.energy.gov/buildings/tools_directory/subjects.cfm/pagename=subjects/pagename_menu=materials_components/pagename_submenu=lighting_systems

**California Energy Commission. Outdoor Lighting Zone Requirements**
A Summary of Outdoor Lighting Zones adopted for the CEC’s Building Energy Efficiency Standards, information about Outdoor Lighting Ordinances adopted by local communities and other supporting documents can be downloaded from this site.
http://www.energy.ca.gov/title24/2008standards/outdoor_lighting/

**California Energy Commission. Title 24 Energy Efficiency Standards**
The CEC’s web site provides access to the new Title 24 Standards, Residential and Nonresidential Compliance Manuals, Alternative Calculation Manuals, and the 2008 Reference Appendices. Links to Compliance Forms and other associated documents are also provided.
http://www.energy.ca.gov/title24/2008standards/

**California Lighting Technology Center (CLTC)**
The CLTC is a collaboration between the University of California, Davis and the California Energy Commission. This center focuses on emerging energy efficient lighting technologies and systems. Resources include descriptions of CLTC projects, profiles of lighting demonstrations, reports and presentations on current lighting topics, case studies, and information about educational opportunities.
http://cltc.ucdavis.edu

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DOE Gateway Program. Demonstration Assessment of Light-Emitting Diode (LED) Roadway Lighting
These reports document the field performance of LED products in outdoor lighting scenarios. The first report discusses the performance of LED street lighting in Oakland, CA. The second is for roadway lighting in Minneapolis, MN.

DOE Solid-State Lighting (SSL)
The Department of Energy’s SSL portfolio provides research and development of SSL technologies, and works to advance the introduction of these technologies to the marketplace. Detailed Test and Summary Reports from the DOE CALiPER (Commercially Available LED Product Evaluation Program) are provided. SSL portfolio details, overviews of LED basics, features, and applications; fact sheets; technical papers; presentations; and articles on LEDs are all available on this comprehensive site.
http://www1.eere.energy.gov/buildings/ssl/

Illuminating Engineering Society of North America (IES)
The IES develops and promotes standards and guidelines for good lighting design and practice. This Web site provides access to the IES publications catalog, manufacturer’s directory, industry news, career information, journal articles and other useful lighting tools.
http://www.iesna.org

International Commission on Illumination (CIE)
This professional organization promotes and develops international standards on light and lighting. The CIE addresses many technical areas of light and lighting including colorimetry, photometry, lighting design, exterior lighting, and photobiology. Abstracts of CIE publications and ordering information are also available.
http://www.cie.co.at

International Dark-Sky Association (IDA)
The IDA seeks to advance awareness of and solutions for nighttime light pollution. Resources include outdoor lighting design information; a guide to approved fixtures; the IDA Lighting Code Handbook; and a directory of current outdoor lighting ordinances that are in effect throughout the U.S.
http://www.darksky.org/

LED Outdoor Area Lighting Fact Sheet
This Department of Energy fact sheet reviews design and specification concerns for outdoor area lighting, and discusses the potential for LEDs to save energy and provide quality lighting in outdoor applications.

Lighting Design Lab
This Seattle-based lighting facility promotes good lighting design and energy efficient technologies. The site features information about their educational classes and consultation services. Over 90 articles from Lighting Design Lab Newsletter, ASHRAE’s Commercial Lighting Guides, and other publications are available. LDL has recently begun a street lighting test.
http://www.lightingdesignlab.com

Lighting Research Center. Outdoor Lighting
The Lighting Research Center at Rensselaer Polytechnic Institute’s School of Architecture provides unbiased technical and design information about lighting, lighting products, and lighting applications. A brief description of the LRC’s Outdoor Lighting Program is followed by publications and project papers on various aspects of effective and efficient outdoor lighting techniques.
http://www.lrc.rpi.edu/researchAreas/outdoor.asp
Lighting Resource. Lighting Application Design
Lighting Resource’s Lighting Application Design product category provides brief overviews of several lighting
design software applications.
http://www.lightingresource.com/products/79///

Model Lighting Ordinance
The International Dark-Sky Association (IDA) and the Illuminating Engineering Society (IES) developed the Model
Lighting Ordinance to assist municipalities with the development and adoption of outdoor lighting standards for
their communities. The Ordinance, its revisions’ history, and seminars on the topic can be downloaded at no
charge.
http://www.darksky.org/index.php?option=com_content&view=article&id=622

National Lighting Product Information Program
NLPIP researches and tests new lighting products. It provides unbiased information about energy-efficient
lighting products and technologies. A glossary, NLPIP product reports, application guides, and searchable
publication database are among the sites many resources. Publications include Lighting Diagnostics, Specifier
Reports, Lighting Answers, and Technical Guides.
http://www.lrc.rpi.edu/programs/NLPIP/index.asp

Tool Lending Library at the Pacific Energy Center
The Tool Lending Library (TLL) site contains images and descriptions for its data collecting devices from over 100
vendors. Application Notes describe measurement techniques and provide step-by-step instructions for using
specific tools. The TLL has a search feature to help you select the right tools for your project. A tool request form
and contact information is also provided.
http://www.pge.com/pec/tll/

Visual Lighting Design Software
The Visual Basic Edition lighting design software can be downloaded free from this site. The Visual Professional
Edition is available for a free 30 day trial period. Descriptions of the software products, downloading instructions,
and purchase information are provided.

PG&E Resources:

LED Street Lights
Information about and links to PG&E’s LED Street Light program. Links to case studies and fact sheets are
included.
http://www.pge.com/mybusiness/energysavingsrebates/rebatesincentives/ref/lighting/lig
htemittingdiodes/streetlightprogram.shtml

Lighting Emitting Diodes
You will find information about PG&E’s Rebates and Incentives for LED lighting products here, including street
lighting.
http://www.pge.com/led/

PG&E Street and Outdoor Lighting Program
PG&E’s Street and Outdoor Lighting program site provides descriptions of available lighting products, details of
lighting services provided, facts about light pollution, and rate schedules for outdoor lighting.
http://www.pge.com/mybusiness/customerservice/otherrequests/streetoutdoorlighting/

Business Tools
PG&E Business Tools include Energy Usage, Billing History and Rate Comparison Tools.
http://www.pge.com/mybusiness/myaccount/analysis/
Demand Response Incentives
Information on the various Demand Response incentives offered by PG&E can be found here.
http://www.pge.com/mybusiness/energysavingsrebates/demandresponse/

Energy Use Audit Services. Energy Analyzer
Here are quick on-line tools for identifying and analyzing business energy use. Tools include an Online Energy Analyzer.
http://www.pge.com/mybusiness/energysavingsrebates/analyzer/

Money-Back Solutions for your Business by Industry
Here you will find information about cash rebates and incentives for replacing existing equipment with new energy efficient technologies or purchasing new equipment. Design assistance for a new facility and system process is also available.
http://www.pge.com/mybusiness/energysavingsrebates/incentivesbyindustry/

Small and Medium Businesses Energy Management Solutions
Information about rebates, incentives, and resources available for your retrofit or new construction project can be found here.
http://www.pge.com/mybusiness/energysavingsrebates/smallmediumbusiness/

Partners and Trade Professionals
PG&E program partners, local contractors and trade professionals offer special assistance in implementing energy efficiency measures for your business.
http://www.pge.com/mybusiness/energysavingsrebates/partnersandtradepros/

PowerPathway™
PowerPathway offers a Portfolio of programs aimed at building capacity within the state of California to produce the skilled workers needed by PG&E and the energy and utility industry. The PowerPathway Portfolio includes four separate but interconnected efforts: Career preparation, Industry workforce challenges, Education, and Green communities.
http://www.pge.com/about/careers/powerpathway/

Self-Generation Incentive Program at Pacific Gas and Electric
Financial incentive information, description of eligible technologies, forms, resources, and program contact information can all be accessed here.
http://www.pge.com/mybusiness/energysavingsrebates/selfgenerationincentive/

Third Party Incentive Programs
PG&E has partnered with energy efficiency specialists in order to extend the reach and effectiveness of energy efficiency, demand response, renewable energy, and self-generation programs. A fact sheet about the specialists and programs can be downloaded here.

Print Resources Available in the PEC’s Resource Center:
- IESNA Technical Memoranda on Light Trespass: Research Results and Recommendations. TM-11-00. IESNA, 2000
Lighting for Exterior Environments. RP 33-99. IESNA Recommended Practice. IESNA, 1999

Journals

- International Lighting Review
- Journal of the Illuminating Engineering Society
- Lighting Design + Application

Other Print Resources: