

Better Buildings Platform: High Performance Outdoor Lighting Accelerator (HPOLA)

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DOE's State and Local
Technical Assistance Team

#### **DOE's State & Local Technical Assistance**

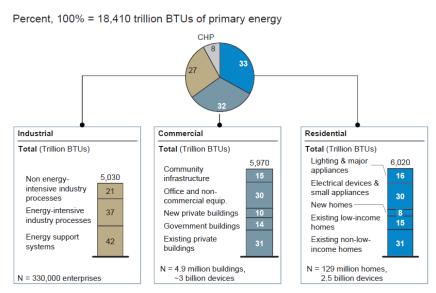
#### Strategic Energy Planning • Program & Policy Design and Implementation • Financing Strategies Data Management and EM&V Technology Deployment • General Education (e.g., fact sheets, 101s) • Implementation Models (i.e., case studies) Resources Research & Tools for Decision-Making • Protocols (e.g., how-to guides, model documents) Webinars Peer Conferences & in-person trainings **Exchange &** Better Buildings Project Teams **Trainings** Level of effort will vary Direct • In-depth efforts will be focused on: **Technical** High impact efforts Opportunities for replicability Assistance • Filling gaps in the technical assistance marketplace







# Cost Effective Opportunities for Energy Efficiency



U.S. spends \$600 billion each year to power homes, plants, & buildings

- Great opportunities in residential, commercial and industrial sectors
- 20% + savings is average
- Other benefits: Jobs,
   Environment, Competitiveness

Source: EIA AEO 2008, McKinsey analysis

#### BUT persistent barriers exist....

- Efficiency not included as corporate decision making; not integrated into business planning
- Lack of senior management buy-in
- Lack of information; need unbiased information
- High hurdle rates
- No ability to engage in ESCO financing
- Split incentives /tenant-employee behaviors at odds with efficiency goals
- Not enough/qualified workforce





## Better Buildings Challenge

# Launched December 2011 Goals:

- Make commercial, industrial buildings & multifamily housing 20%+ more efficient in 10 years
- Save more than \$80B+ for US organizations
- Create American jobs; improve energy security
- Mitigate impacts of climate change

#### How:

- ✓ Leadership
- ✓ Results
- ✓ Transparency
- ✓ Best Practice Models
- ✓ Recognition
- ✓ Catalyzing Action



Launched 2011, Now 200+ Partners
Commercial, Industrial, Public, Private

#### Represent:

3+ Billion Square Feet

\$2 Billion Private Financing

600+ Manufacturing plants

\$2 B Federal Commitment





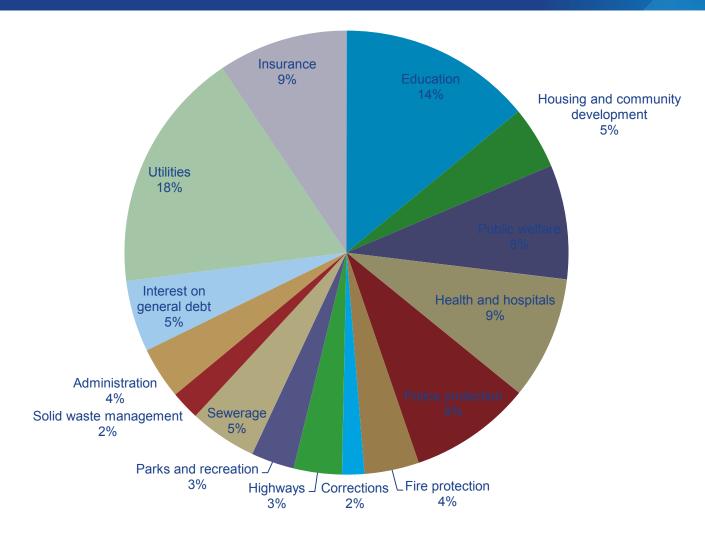
# President's Climate Action Plan: Expands Better Buildings

- Better Buildings includes the built environment
  - → interior + exterior
- Better Buildings Accelerators
  - Designed to demonstrate specific innovative approaches, which upon successful demonstration will accelerate investment in energy efficiency
  - Four focus areas
    - ✓ Energy Data Accelerator
    - ✓ Performance Contracting Accelerator
    - ✓ Strategic Energy Management Accelerator
    - **✓ High Performance Outdoor Lighting**





# Municipal Expenditures



Source: U.S. Census Bureau, Federal, State and Local Governments, Government Finances, 2006.





# Opportunity

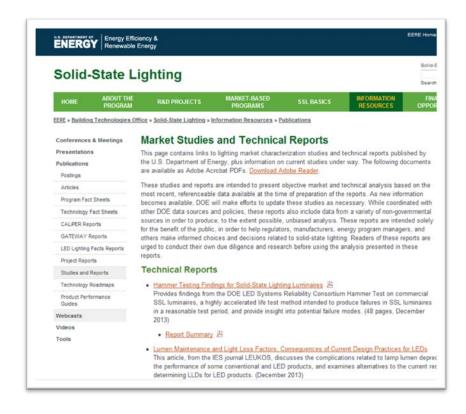
- To provide state and local governments with tools and frameworks to enable broad deployment of energy efficient street and outdoor lighting systems upgrades.
- Potential Savings with 100% market penetration:
  - The total source energy use of streetlight luminaires was about 452 tBtu in 2012.
  - High efficiency technologies are currently saving 3.5 tBtu each year, but a complete technology switch to high efficiency would more than cut the energy consumption in half, saving 238 tBtu per year.
  - This potential savings equates to an annual energy cost savings of \$2.3 billion.





### Market Studies

- Growing evidence indicates market acceptance and satisfaction with the current technology.
- High performance outdoor lighting has the potential to reduce U.S.
   lighting energy usage by nearly one half and contribute significantly to our nation's climate change solutions
- DOE's draws on key partnerships with the SSL industry, research community, standards setting organizations, energy efficiency groups, utilities, and others, as well as lessons learned from the past







# What is the High Performance Outdoor Lighting Accelerator (HPOLA)?

#### A collaborative effort designed to:

- Identify, assess, and address issues that limit investment in high efficiency technologies such as financing and utility models.
- Accelerate the adoption and use of high efficiency outdoor lighting in the public sector.
- Consider all categories of outdoor lighting for which local governments or states pay the energy bills (i.e., street/roadway, parking facility, and parks and recreation lighting).





## Innovation, Leadership, and Partnership

#### **HPOLA Goals:**

- Replace over 500,000 poles during the next two years.
- Collaborate with local municipalities to demonstrate practical and effective best practices to accelerate the adoption of high-efficiency outdoor lighting.
- Improve system-wide replacement processes at the municipal level.





### **HPOLA Partner Status**

- Signatories are States, Cities and Regional Energy Networks.
- Charter Partners:
  - Detroit, MI
  - Huntington Beach, CA
  - Little Rock, AR
  - Mid-America Regional Council representing Kansas City, MO metro area
  - West Palm Beach, FL
- We have since gained five new partners since the program announcement at the Better Buildings Summit 2014: State of Rhode Island, Southeast Michigan Regional Energy Office (Detroit metro), Southern California Regional Energy Network (Los Angeles metro), Flint, MI, and Portland, ME.
- Recruitment will continue for another few weeks to reach adequate representation across various geographies, utility structures, and regulatory environments.





### Benefits to Partners

- Access tools and resources to help states and municipalities navigate the transition to high efficiency outdoor street lighting.
- Access and leverage technical expertise developed under other DOE efficient outdoor lighting programs.
- Create collaborative solutions to address financial, regulatory, and technical barriers that constrain broad technology deployment.
- Receive public recognition from DOE as a national leader in municipal system-wide replacement to high efficiency outdoor lighting.





### Get Involved

- Review the HPOLA Fact Sheet
- Sign and Return the Partnership Agreement (p.2)
- Join the Better Buildings Challenge
- More HPOLA information can be found at http://www.energy.gov/betterbuildings



Partnership Agreement

HIGH PERFORMANCE OUTDOOR LIGHTING ACCELERATOR

The Better Buildings Initiative is a national leadership initiative calling on state and local officials, corporate chief executive officers, university presidents, utilities, and other leaders to make substantial commitments to improve the energy efficiency of their buildings and plants, save money, and increase competitiveness. The cornerstones are a commitment to a 20% or more savings target across the organizations" portfolios and a commitment to share strategies that work, substantiated by energy data across the portfolios. The U.S. Department of Energy (DOE) is expanding this initiative to engage leaders in a set of Better Buildings Accelerators designed to demonstrate specific innovative approaches, which upon successful demonstration will accelerate investment in energy efficiency.

The High Performance Outdoor Lighting Accelerator is designed to accelerate the adoption and use of high efficiency outdoor lighting in the public sector, replacing over 500,000 poles over the next two years starting in May 2014, while developing best practice approaches to municipal system-wide replacement for this period and the longer term. The Accelerator applies to all categories of outdoor lighting for which local governments or states pay the energy bills (i.e., street/roadway, parking facility, and parks and recreation lighting) and will focus on addressing issues that limit investment in highefficiency technologies such as financing and metering/utility tariff-rates. The goals of the High Performance Outdoor Lighting Accelerator include:

- ▶ Demonstrate best practice approaches of municipal system-wide replacement to high-efficiency outdoor lighting and develop road-tested examples for other public sector organizations to use.
- Provide tools and guidance to address technical issues and help establish policy/tarff framework to allow more local governments to take advantage of high efficiency outdoor lighting.
- Document and share best practices on overcoming technical, regulatory, and financial barriers to encourage broad deployment of high efficiency outdoor lighting.
- Develop recommendations for post-Accelerator next steps.

High Performance Outdoor Lighting Accelerator Partners, in collaboration with DOE, will demonstrate practical and effective best practices to accelerate the adoption of high-efficiency outdoor lighting. Accelerator Partners and DOE enter into this partnering agreement to improve system-wide replacement processes at the municipal level.

#### Municipal Partner Agrees to:

- Appoint an Accelerator point of contact.
- Develop an outdoor lighting roadmap incorporating a system-wide analysis and with the objective of replacing a significant portion of the city's portfolio of outdoor lighting within two years.
- Share results and lessons learned with DOE and other Accelerator Partners as approaches are Implemented, including tracking baseline and improved energy and non-energy benefits.
- Identify a key barrier within three months of joinir the Accelerator, to be addressed with peers and DOE technical assistance over a 12-month period.

in Addition, State/Regional Partner

 State/Region commits to collaborating with three or more municipalities to develop an outdoor lighting roadmap incorporating a system-wide analysis and with the objective of replacing a significant portion of each municipality's portfolio of outdoor lighting within two years.

#### U.S. Department of Energy Agrees to:

- Appoint an Accelerator point of contact.
- Facilitate peer exchange on models for utility engagement and financing solutions.
- Develop additional technical tools and/or assistance necessary to meet the goals of the Accelerator, subject to resources.
- Provide technical assistance to Partner to overcome a key barrier.
- Provide recognition to Accelerator Partners for their leadership in addressing these issues.

Learn more at energy gov/betterbuildings

ENERGY





## **HPOLA Workplan**

Assess HPOLA Partner profiles and project descriptions

Establish framework for problem identification, approach, and direct technical support needed

Perform in-depth assessments of Partner barriers and challenges

Determine municipality-focused best practices and strategies that provide guidance to other states, local governments, and regional energy networks

Share applicable resources to create implementation models that enable communities to pursue system-wide high performance outdoor lighting retrofit projects





# Leverage US DOE's Expertise



Energy Efficiency and Conservation Block Grant Program (EECBG)









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## Questions?

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