

News

LED streetlights perform best overall, say engineers



Light-emitting diode (LED) streetlights perform best overall in terms of energy efficiency, lifetime, environmental impact and costs, according to the first comprehensive analysis by US engineers.

The team from the University of Pittsburgh compared the lifecycle, from extraction of raw materials through fabrication and assembly to electricity consumption during use and finally disposal of LEDs, high-pressure sodium (HPS) and metal halide lamps and the gas-based induction bulb.

LEDs may be among the most expensive options for streetlighting, but consume half the electricity of HPS or metal halide installations, last up to five times longer and produce more light.

The analysis concurs with critics of LEDs that they do need considerable energy to produce and can be difficult to recycle, but they contain no mercury and fewer toxins such as iodine and lead.

The greatest impact of LEDs, however, comes when electricity consumption during use is considered, which is much more significant than that required for production. LEDs require much less energy than HPS or metal halide lamps, which converts into much lower CO₂ emissions.

Many cities across the US are considering switching to LED streetlights from Los Angeles and San Francisco to Pittsburgh.

The potential savings could be huge. The city of Pittsburgh, for example, could save \$1 million a year in energy costs and \$700,000 in maintenance by replacing HPS lamps with LEDs.

For further information:

- www.pitt.edu/
- www.pitt.edu/news2010/Streetlight-Chart.pdf