



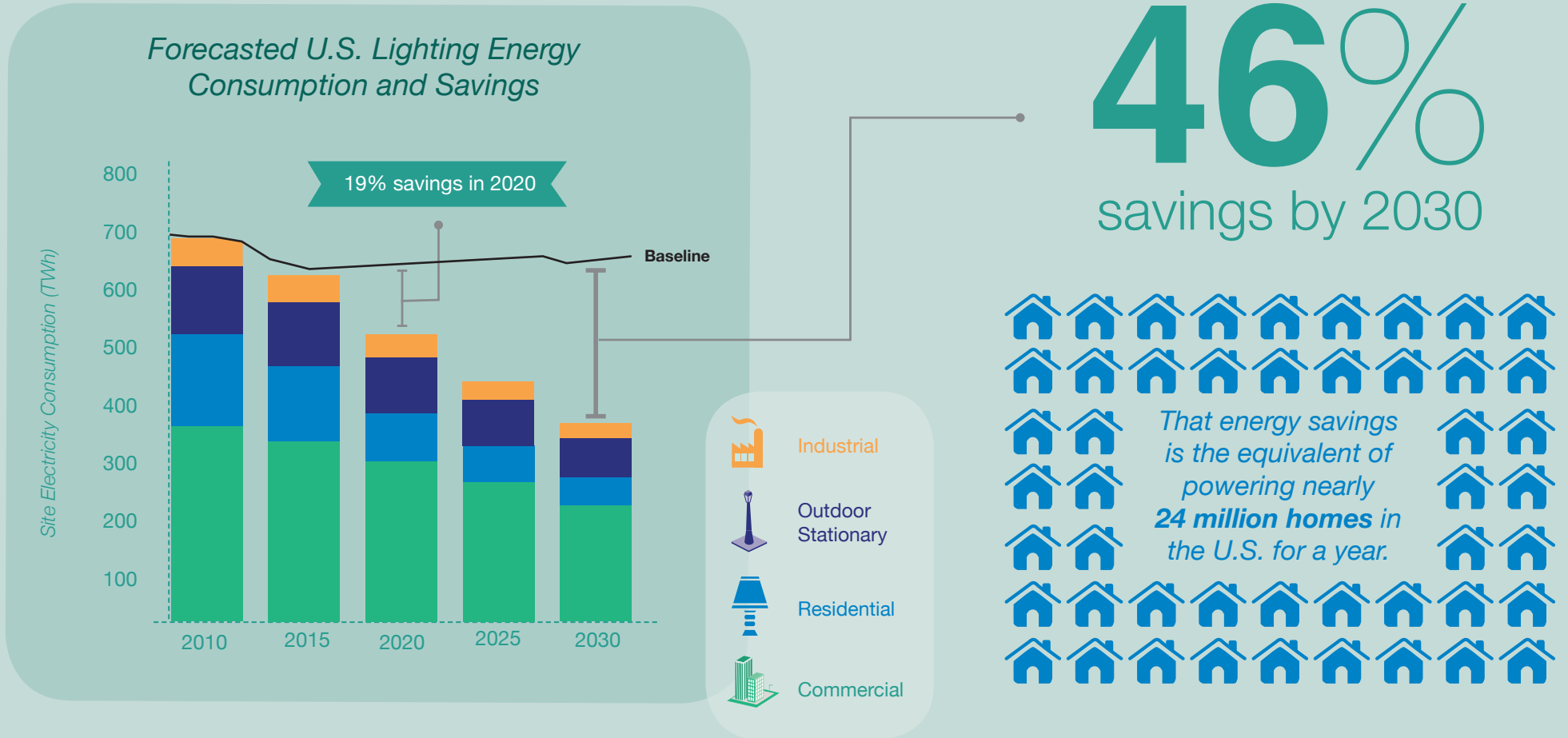
# ENERGY SAVINGS OF SOLID-STATE LIGHTING

A STUDY BY THE U.S. DEPARTMENT OF ENERGY\*

The energy savings potential of light-emitting diode (LED) white-light sources compared to conventional white-light sources

## EXPECTED ENERGY CONSUMPTION

LED lighting has the potential to cut U.S. lighting energy consumption **nearly in half** by 2030.



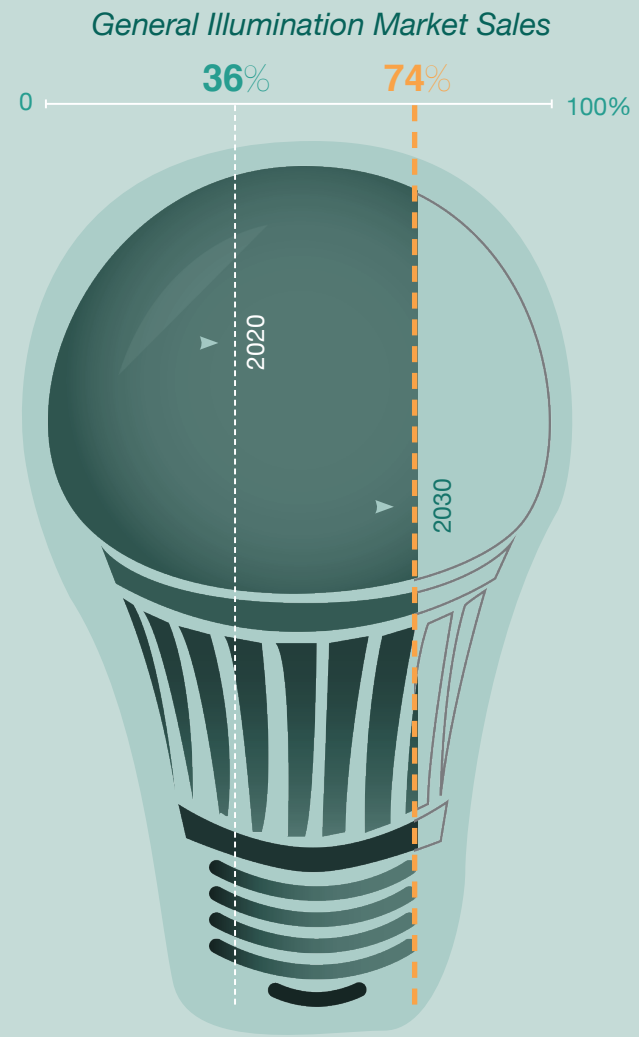
## U.S. DOE MARKET PROJECTIONS

With more consumers expected to switch to LED lighting, researchers project forward growth in lighting demand between 2010 and 2030.

By 2020, LED lighting is expected to represent **36% of lumen-hour sales**.

By 2030, it is expected to grow to **74% of lumen-hour sales**.

LED lighting will gain significant market penetration as lamps and luminaires meet their expected efficiency, lifetime and price targets.



## SAVINGS

In 2030, the annual energy savings due to the increased market penetration of LED lighting is estimated to be approximately

**300** TERAWATT-HOURS



Equivalent to the annual electrical output of about **fifty 1,000-megawatt power plants**.



Equivalent to **\$30 billion** in energy savings in 2030 alone.

### Greenhouse Gas Emissions

The energy savings will reduce greenhouse gas emissions by **210 million metric tons of carbon**, which is equivalent to:

Emissions from **86 billion** gallons of gasoline.

Removing **150.9 million** cars from the roads.

Emissions from the electricity use of **96 million** homes.

Over the 20-year analysis period, the cumulative site energy savings are estimated to total approximately **2,700 terawatt-hours**, representing approximately **\$250 billion** at today's energy prices.

\* [http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/ssl\\_energy-savings-report\\_jan-2012.pdf](http://apps1.eere.energy.gov/buildings/publications/pdfs/ssl/ssl_energy-savings-report_jan-2012.pdf)

