

Commercial Lighting and Appliances

For the commercial sector in the United States lighting accounts for 27% of primary energy use, with appliances such as refrigerators and electronics and computers accounting for another 16%.

Energy use for lighting can be reduced 90% by switching to high efficiency LEDs. We assume that refrigeration can be improved to use 30% less energy. We leave electronics use unchanged as we did for the residential sector.

Level 1

The population grows at 1.5% a year resulting in a similar growth for the commercial sector. Energy use for lighting and appliances grows by a factor 1.7 from 2015 to 2050.

Level 2

Partial implementation of LEDs means lighting demand remains constant in spite of more lights being installed.

Level 3

LED fraction increases as does efficiency of refrigerators, leading to an almost constant energy demand for lighting and appliances as the sector grows.

Level 4

We convert all commercial lighting to LEDs resulting in 90% energy savings. We assume a further 30% energy savings on refrigeration. Total energy use for lighting and appliances decreases by 40% from 2015 to 2050.

