ELS FACT SHEET

How Do You Calculate Lighting Energy Use?

Many people wonder how ESCOs and energy efficiency consultants are so sure that efficient lighting like LEDs can save energy.

"How do we know for sure we're saving energy and money with LEDs?"

"How can you predict with pinpoint accuracy how much energy we will save with LEDs?"

There are only three factors involved in calculating energy savings related to lighting. Two are constant and one is variable. Good ESCOs can guarantee their projections using a very simple formula.

W x $kWh x Hrs ÷ 1000 = Cost of Lighting Energy

W = is Wattage of existing bulbs vs. the new LEDs | $kWh = the cost of electricity | Hrs = Hours the lights are on
You divide by 1000 to get decimal point in proper location since cost of energy is in kWh (one thousand kilowatts hours)

The wattages are facts that cannot be argued. If you go from a 100w bulb to a 50w bulb, you will save 50% on energy consumption. Guaranteed. It's simple math.

The kWh charge is set by the electric company and cannot be altered by the end user or the contractor. If this rate were to change, it would affect the projected dollar savings by a direct correlation. It is not likely the rate would drop. (Has it ever?) It will likely go up, making your savings even greater than the projections.

The one variable in the formula is the hours the lights are on. Assuming the hours are constant (i.e. the same BEFORE and AFTER the project), your savings are going to be exactly what the formula states. If they change–either up or down–it will affect the kWh savings by a direct correlation. Nevertheless, you will still save the wattage and kWh charge on the new lamp over what it would have been with the old one.