



Refrigerator Energy Use Calculator

Background:

Home energy use associated with refrigerators/freezers is significant. Since a refrigerator runs 24 hours a day, the amount of energy used in a year can be as high as 15% of your annual electric bill. The goal of this calculator is to show you how much energy your refrigerator consumes in a year so you can compare this energy use to the most efficient models available. When it is time to purchase a new refrigerator you will be more knowledgeable on what to purchase.

Old Refrigerators are Inefficient:

An average refrigerator purchase in 1976 consumed 1,800 kWh per year. The last federal standard requiring more efficient refrigerators was in 1997 and all refrigerators meeting this standard consume less than 800 kWh/year with the average over all size ranges consuming less than 550 kWh/yr. In 2007, the federal government passed the Energy Independence and Security Act (EISA) of 2007 and the Department of Energy is in the process of creating more efficient standards for refrigerators going forward. If you purchase an “Energy Star” refrigerator, it will consume 20% less energy than the 1997 standard.

Measure Your Refrigerator:

Since refrigerator energy use varies based on when the compressor is running, the energy use must be over a 24 hour period to get an accurate estimate of annual energy use. Use the attached form to do the calculations.

Refrigerator Brand: _____

Refrigerator Model #: _____

1. Record data:

- a. Record start time: _____ and date _____
- b. Plug meter into wall.
- c. Put dial on “kWh Reset” momentarily to reset the reading to zero.
- d. Switch the dial on the meter to “kWh”
- e. After approximately 24 hours record:
- f. End time _____ Date _____ kWh _____
- g. Disconnect the meter.

B. Do calculations:

Your calculations:	Example:
Start time: _____ Hour: _____ Minute _____ Date: _____	Start time: 6:49 PM Hour: 6 Minute: 49 Date: Monday, September 1
End time: _____ Hour: _____ Minute _____ Date: _____ kWh: _____	End time: 6:19 PM Hour: 6 Minute: 19 Date: Tuesday, September 2 kWh: 1.304 kWh
Total number of hours: _____ Total number of minutes: _____ Divide minutes by 60 _____ ÷ 60 = _____ Add hours to minutes _____	# of hours: 23 # of minutes: 30 30 ÷ 60 = .5 Add hours to minutes: 23 + .5 = 23.5
Calculate annual energy use: _____ kWh x 8,760 (the number of hours in a year) = _____ x total hours _____ = _____ kWh/yr	Calculate annual energy use: 1.304 kWh x 8,760 = 11423.04 ÷ 23.5 hours = 486kWh/year

If you would like to calculate the annual cost, SAP homeowners pay approximately \$0.09 Cents per kWh without taxes and fees. With taxes and fees, it is about \$0.13.

kWh _____ x .13 = _____ cost per year	486kWh/year x .13 = \$63.18
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