



## 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.

### Reading

Record Data:	Brand = _____ Model No.= _____
Plug meter into wall and put dial on “kWh Reset” momentarily to reset the reading to zero. Then switch the dial on the meter to “kWh”.	Start Time = _____ Start Date= _____
After approximately 24 hours disconnect the meter and record the end time and kWh use.	End Time = _____ End Date = _____

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	kWh = _____
Calculate approximate energy use per year. (Note: There are 8,760 hours in one year.)	
1) Subtract time readings from start to end time.  2) Convert minutes to hours by dividing minutes by 60. 3) Calculate estimated annual energy use. Multiply kWh reading by [8,760/(Total Hours)]	Hours = _____ Min = _____  Total Hours = _____ + (Min ÷ 60) = _____ hrs  Annual Energy Use = _____ kWh × 8,760 hr/yr ÷ _____ Total Hours  = _____ kWh/yr

**Example:** Reading

Start Time = 5:35 pm on Monday
End Time = <u>6:00 pm on Tuesday</u>  kWh = 3.0 kWh
Hours = 24 Min = 25  Total Hours = 24 + (25 ÷ 60) = 24.42 hrs  Annual Energy Use = 3.0 kWh × 8,760 hr/yr ÷ 24.42 Total Hours = 1,076 kWh/yr

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