



# Calculating Electrical Costs

By Jan Schreier

## Formula:

1. Find the rating of Amps (for pumps) or Watts (for heaters & lights) of each accessory that is running
2. Convert Amps to Watts using the conversion formula (below \*)
3. Add the Watts of all accessories that are running
4. Multiply by the cost per watts per day (calculated below \*\*)

*Example: The following accessories are used to keep a pond open during the winter*

### Step 1

*One 1600 Gallon/Hour pump rated at 2.2 Amps*

*One 400 Gallon/Hour pump rated at 0.6 Amps*

*One Air Pump rated at 0.1 Amps*

*One 150 Watt bird bath heater*

*One 100 Watt heat tape to keep waterfall hose from freezing*

### Step 2

*2.2Amps x 120 Volts = 264 Watts*

*0.6 Amps x 120 Volts = 72 Watts*

*0.1 Amps x 120 Volts = 12 Watts*

### Step 3

*264 Watts + 72 Watts + 12 Watts + 150 Watts + 100 Watts = 598 Watts*

### Step 4

*598 Watts x \$0.00288/day = \$1.72/day*

**\*To Convert Amps to Watts: Amps x Volts = Watts**

*Example:*

*3 Amp pump x 120 Volts = 360 Watts*

**\*\*Calculating Cost per Amp per Day: Watts x Cost per Kilowatt-hour x 24 hours in a day + 1,000 = Cost per Watt per day**

*Example:*

*Average cost per kilowatt-hour = \$0.12 (2008 Excel Energy Oct-May non-energy savings rates)*

*\$.12/KWH x 24 Hours ÷ 1,000 = \$0.00288 per Watt per Day*