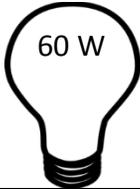
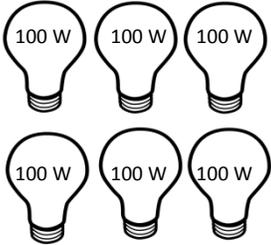


## WHAT IS KW vs KWH?

Simply stated... kW is kilowatts or power. kWh is kilowatt-hours or energy used over a period of time. Again, to remain simple, we will refer to kW as power (also referred to as capacity, demand or load) and kWh as energy (also referred to as consumption or usage). The kW *capacity* or *demand* is the rate at which energy is consumed.

The following example may be helpful. A single 60-watt light bulb operating for 10 hours would use 600 watt-hours or 0.6 kWh of energy, (proof: 1 bulb x 60 watts x 10 hours = 600 watt-hours or 0.6 kWh). This is exactly the same amount of energy that is used if six, 100-watt light bulbs were operated for one hour (proof: 6 bulbs x 100 watts each x 1 hour = 600 watt-hours or 0.6 kWh).

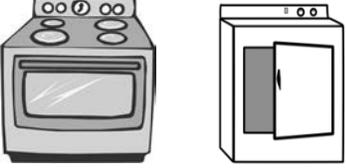
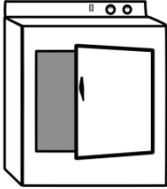
However, the electrical capacity or demand required to supply six 100-watt light bulbs would be ten times greater than that required to operate the single 60-watt light bulb, i.e., 600 watts vs. 60 watts.

	One 60-watt light bulb for 10 hours	Demand = 60w / 1000 or .06 kW Energy = 60w /1000 *10hrs or .6 kWh
	Six 100-watt light bulbs for one hour	Demand = 6*100w / 1000 or .6 kW Energy = 6*100w / 1000 *1hr or .6 kWh

The same principal applies to how residential customers use their household appliances. If a person bakes cookies during the same time period that they dry clothes, their electrical demand will be the sum of the individual demands of each appliance. Just as in the example with the six light bulbs, the kW demand in this case will be much higher than if that same person bakes cookies, turns off their oven and then starts the dryer.

Here is an example. In the first case where both appliances are in use at the same time, the total kW demand is the sum of demands of both appliances. That is 3.8kW plus 5.5 kW, or 9.3 kW. Since both appliances are on for an entire hour in our example, the total energy use is 9.3 kW x 1 hour or 9.3 kWh. In the second case where the stove is on first, and then the dryer is on, the kW demand will NOT be the sum of the demands, but rather just the highest demand of

the two, i.e., the 5.5 kW that is required for the dryer. The total energy consumed is 9.3 kWh in both scenarios.

	<p>3800 watt oven and 5500 watt clothes dryer for one hour</p>	<p>Demand = <math>3800 + 5500 / 1000 = 9.3</math> kW          Energy = <math>3800 + 5500 / 1000 * 1</math> hr = 9.3 kWh</p>
	<p>3800 watt oven for one hour</p>	<p>Demand = <math>3800 / 1000 = 3.8</math> kW          Energy = <math>3800 / 1000 * 1</math> hr = 3.8 kWh</p>
	<p>5500 watt clothes dryer for one hour</p>	<p>Demand = <math>5500 / 1000 = 5.5</math> kW          Energy = <math>5500 / 1000 * 1</math> hr = 5.5 kWh</p>

Please note that the kW demand values in the above example are for instructional purposes only. In practice, utility meters measure the average load during specified time intervals (residential is 60-minute intervals). Also, most appliances cycle power periodically, such that the oven or dryer may switch the heating elements on for a few minutes, and then cycle them off for a few minutes. What this means is that the 9.3 kW peak demand described in the example above, would most likely be significantly less. For more information of how the meter calculates the maximum kW demand, please contact our Metering Department at ext. 5547 or 5581.