ALAMEDA MUNICIPAL POWER
A Department of the City of Alameda

Energy Questions, Terms, and Myths

WHAT DOES ELECTRICITY DO?

Electricity is the movement of electrons. Electrons create charge which we harness to power things like light bulbs, phones, or stoves. Items that use electricity use power which is measured in watts (W).

A watt is the rate of power of the item and a kilowatt (kW) is 1000 watts of power being used. This is often confused with kilowatt-hour (kWh) which is a measure of energy used over time, generally in hours. Electricity cannot be consumed without producing one of these three results:

HEAT — **When an electric current flows through a material with resistance such as a wire, the resistance generates kinetic energy and is transformed into heat.**

LIGHT — **Using electricity to produce light is achieved through the phenomenon of electroluminescence. When an electric current flows through certain materials, like those found in light-emitting diodes (LEDs) or fluorescent tubes, it excites electrons within the material. As these excited electrons return to their lower energy state, they release photons of light.**

WORK (MOTORS) — **Motors use electricity to produce work, converting electrical energy into mechanical energy. Working electricity powers includes your refrigerator, generators, and anything in your home with a motor.**

COMMON ENERGY TERMS AND VOCABULARY

Air Leakage: The uncontrolled flow of air in and out of a building, often leading to energy waste and reduced indoor comfort.

Baseload: The minimum amount of electricity required to meet a household's essential energy needs, representing a consistent level of demand that forms the foundation of energy consumption.

Caulking: The process of sealing gaps and cracks around windows, doors, and other openings to prevent air leakage and improve insulation.

Energy Audit: A comprehensive assessment of energy consumption, identifying areas where energy efficiency can be improved and recommending solutions to reduce energy usage.

Energy Efficiency: The ratio of useful energy output to the total energy input in a system, process, or device. It measures how effectively energy is converted into desired outcomes.

ENERGY STAR: A certification program that identifies energy-efficient products and appliances, helping consumers make informed choices about energy consumption.

Heat: Energy that moves between systems or objects with different temperatures. Heat is also known as thermal energy and is commonly measured in British Thermal Units (BTU), calories, or joules.

HVAC (Heating, Ventilation, Air Conditioning): Systems designed to control indoor temperature, humidity, and air quality, aiming for optimal comfort and energy efficiency.

Insulation: Material used to reduce heat transfer between spaces by inhibiting the conduction, convection, or radiation of heat.

Kilowatt-hour (kWh): A unit of energy representing the consumption of one kilowatt of power for one hour. It's commonly used to measure electricity usage.

Peak Demand: The highest level of electricity usage experienced by a household, typically occurring during periods when energy-intensive appliances and systems are simultaneously in operation.

Renewable Energy: Energy derived from naturally replenished sources, such as sunlight, wind, water, and geothermal heat, which have minimal impact on the environment.

Smart Meter: A digital meter that tracks energy consumption in real time and provides accurate data to both consumers and utility companies, encouraging more efficient energy use.

Solar Panels: Photovoltaic devices that convert sunlight into electricity, offering a renewable and sustainable energy source for buildings.

Standby Power: Also known as "phantom" or "vampire" power, it refers to the energy consumed by devices that are turned off but remain plugged in and ready to be turned on.

Thermostat: A device that regulates temperature by controlling the operation of heating and cooling systems. Most thermostats are programmable and can have heating and cooling schedules. Smart thermostats allow for more finite controls and automation.

Time-Of-Use (TOU): Eligible EV customers who opt in to enroll in this optional rate will be charged two different prices depending on the time of day they use electricity.

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ENERGY MYTH BUSTERS

MYTH *Electric Meters can run fast and register more power than was used.*

FACT

Meters do not run "fast" or absorb more electricity than is used. Thousands of meters are tested every year and results show that readings are exceptionally accurate. In fact, whether you have the latest smart (electronic) meter or an old mechanical meter, they still perform relatively similarly. Lab tests have shown that 5% of mechanical meters slow actually down over time.

MYTH *Duct and motor cleaning saves energy.*

FACT

Duct cleaning is a good practice to make your HVAC work smoothly, it will not cause a significant decrease in energy. Your HVAC system will use amount of energy as it normally does no matter what your ducts have in them. This goes for most appliances with a motor including your refrigerator. Vacuuming the coils around your refrigerator will not significantly decrease energy consumption. Practicing good maintenance habits will reduce the amount of buildup in motored electronics and therefore allow them to last longer and continue to work over time.

MYTH *Some portable space heaters are more efficient than others.*

FACT

All electric heaters are equally efficient at their point of use. However, the way they are programmed and how they create heat will vary. Be on the lookout for the most efficient space heaters by looking at how they produce heat and whether they are programmable so that they can be turned off when they are not needed.

MYTH *The higher I turn up my thermostat, the faster my home heats up.*

FACT

Your thermostat will tell your heating system to rise to the temperature the thermostat is set to no matter what the temperature is. The heating system will run at its normal pace to get your home to and maintain that temperature no matter what you set it to. Refer to our thermostat guide for tips on how to program your thermostat.

MYTH *My neighbor with "the exact same house" and same number of people should have the same size bill.*

FACT

Electric use varies based on behavior and everyone is different. Your neighbor may have the same infrastructure, but they may not be using as much electricity as your own household. They may have different appliances, TVs, or even light bulbs. Electricity usage has many variables that can constantly change from household to household.

MYTH *Keeping everything plugged in is spiking my electric bill.*

FACT

This myth is referring to "Phantom Load" or standby power which is any kind of electricity that is used by devices or appliances while they're inactive or in standby mode. The most common users are televisions and monitors, cable boxes, gaming systems, and computers. Plugging these items into advanced power strips is an easy way to deter phantom load. The standby mode will not cause spikes in energy usage because the rate of energy at which this mode uses is at a consistent rate.