Sometimes a natural flow, such as

wind power or water power, can be used directly to turn a generator so no heat is needed.Photoelectric conductivity

If light with a photon energy hv that exceeds the work function W falls on a metal surface, some of the incident photons will transfer their energy to electrons, which then will be ejected from the metal. Since hv is greater than W, the excess energy hv − W transferred to the electrons will be observed as their kinetic energy outside the metal. The relation between electron kinetic energy E and the frequency v (that is, E = hv − W) is known as the Einstein relation, and its experimental verification helped to establish the validity of quantum theory. The energy of the electrons depends on the frequency of the light, while the intensity of the light determines the rate of photoelectric emission.