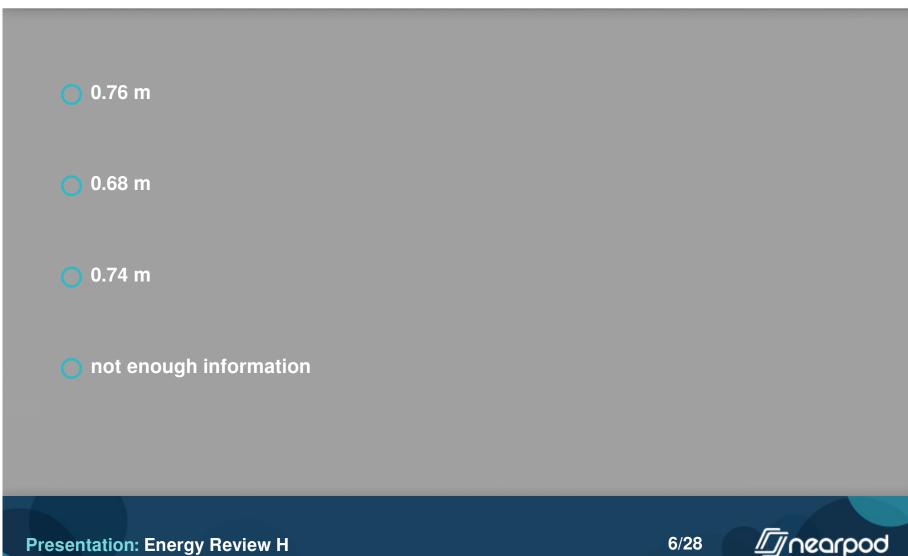
A 6 kg rock is dropped from a height 3 m onto a 450 N/m spring. What is the maximum compression of the spring?



Solar energy utilizes the photoelectric effect. Which of the following most accurately describes this effect?

- bonding and transferring of electrons between silicon atoms
- the liberation of an electron due to a high energy photon
- electrons emit light as they jump from energy levels
- all of the above

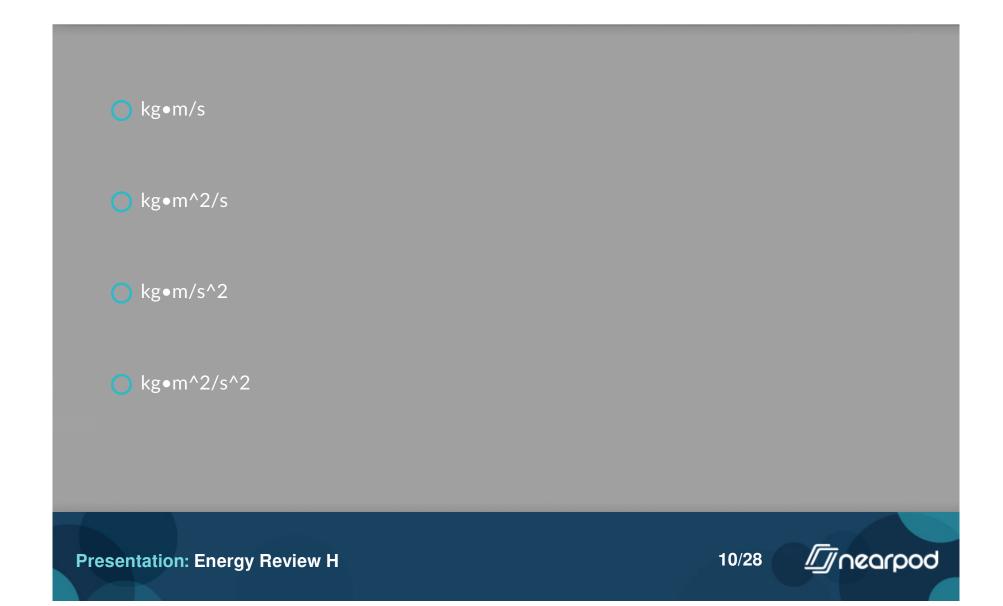
15 N of force are needed to push a 10 kg box 5 m up a hill. The box loses 2 J of energy due to friction on the way up. How high up is the box above where it started?



What is the name of the process in which a uranium atom is split into smaller atoms in order to release energy?



Which combination of fundamental units can be used to express energy?



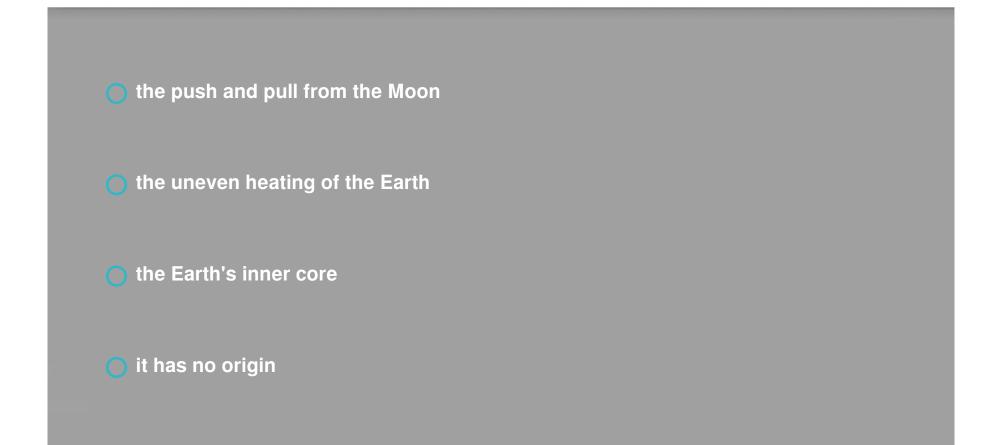
What is Natural Gas mainly comprised of?



A force of 1000-N must be applied to the corner of a car by a lever (jack) to lift it so the tire can be changed. The fulcrum is 5.0-cm from the end of the 1.0-m long of the jack. How much force must be applied to the other end for the jack?



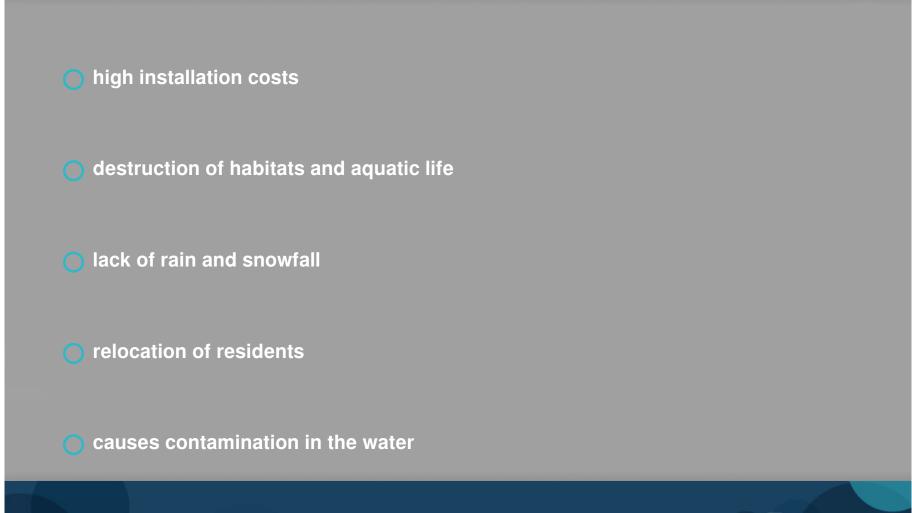
Where does wind energy originate from?



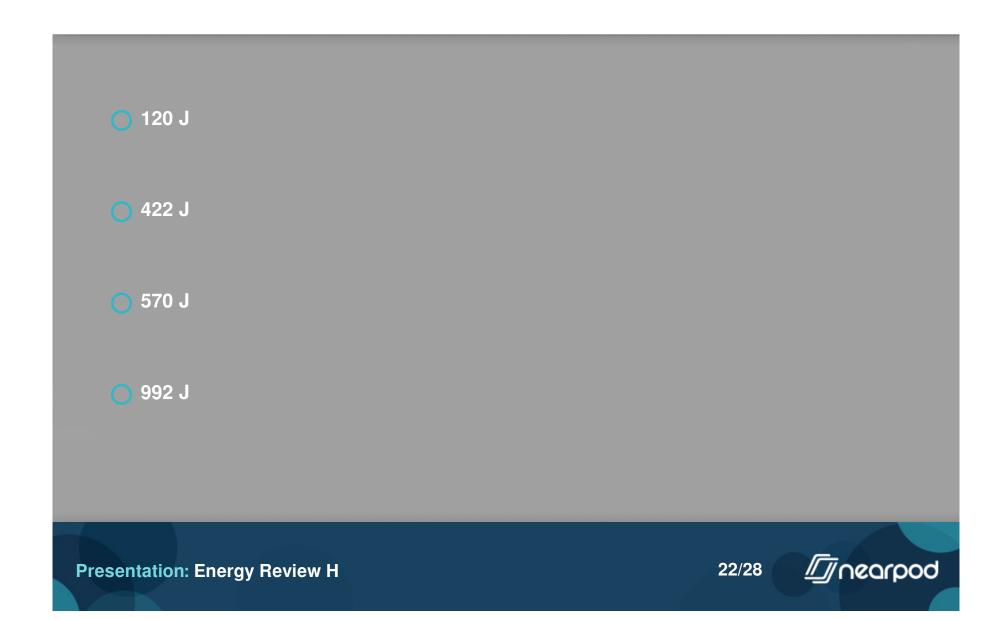
A 70-kg cyclist develops 210 Watts of power while pedaling at a constant velocity of 7.0 m/s east. What average force is exerted eastward on the bicycle to maintain this constant speed?



Which of the following is not a drawback of hydropower?



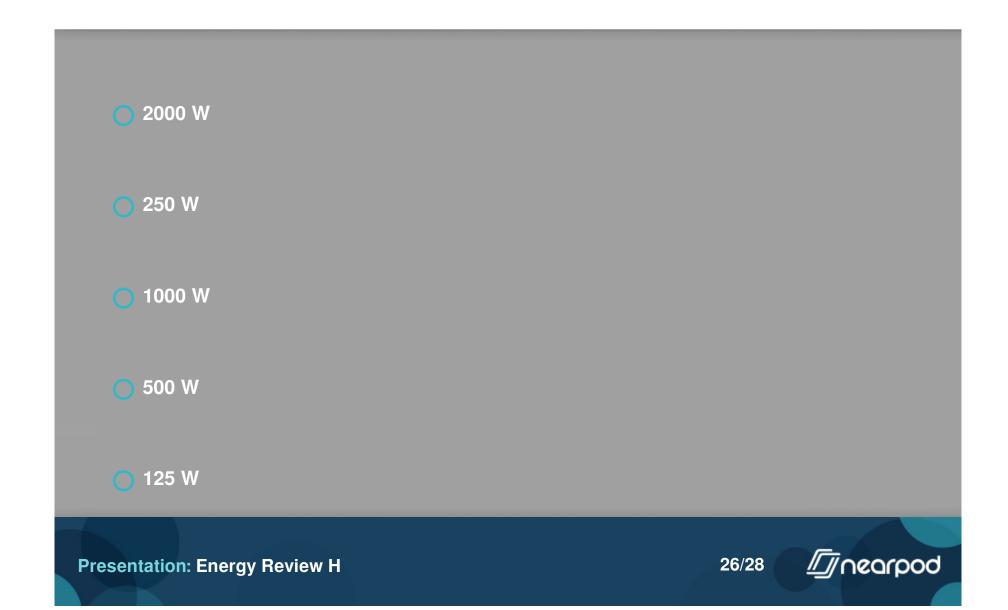
A 15.0-kilogram mass is moving at 7.50 meters per second on a horizontal, frictionless surface. What is the total work that must be done on the mass to increase its speed to 11.5 meters per second?



Which of the following materials is NOT used as a resource for biomass energy?



A car heads down the 210 at 20 m/s. The car experiences 100 N of force from air resistance. How much power is the car consuming?



For every 1 unit of input energy, how many units of energy is produced?

