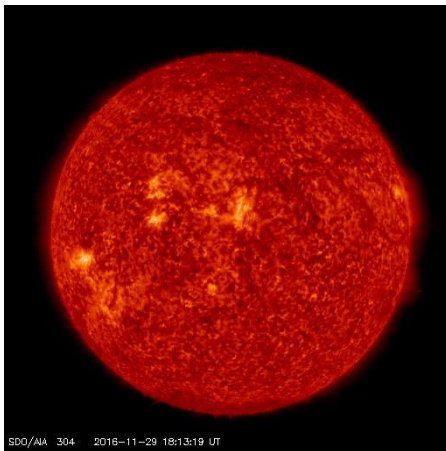
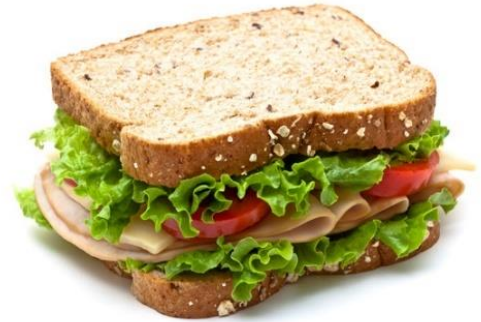
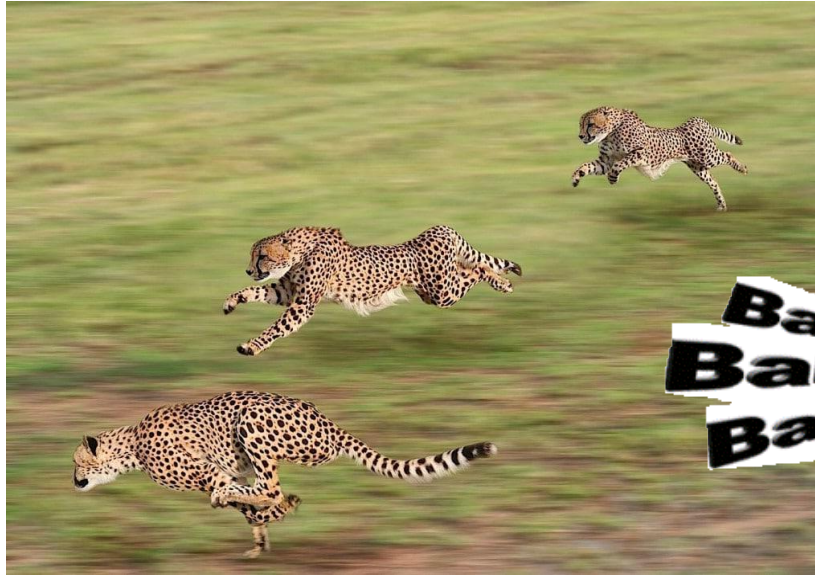
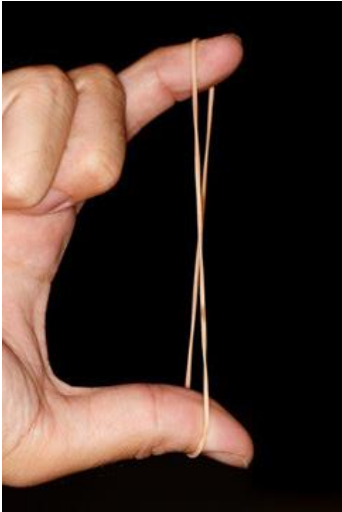


What type of energy?

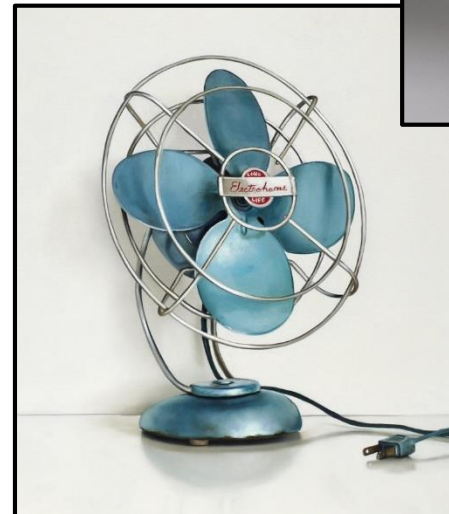


Law of Conservation of Energy

Total energy of an isolated system is conserved over time: energy can be neither created nor destroyed, but can be transferred, or converted from one form or place to another.

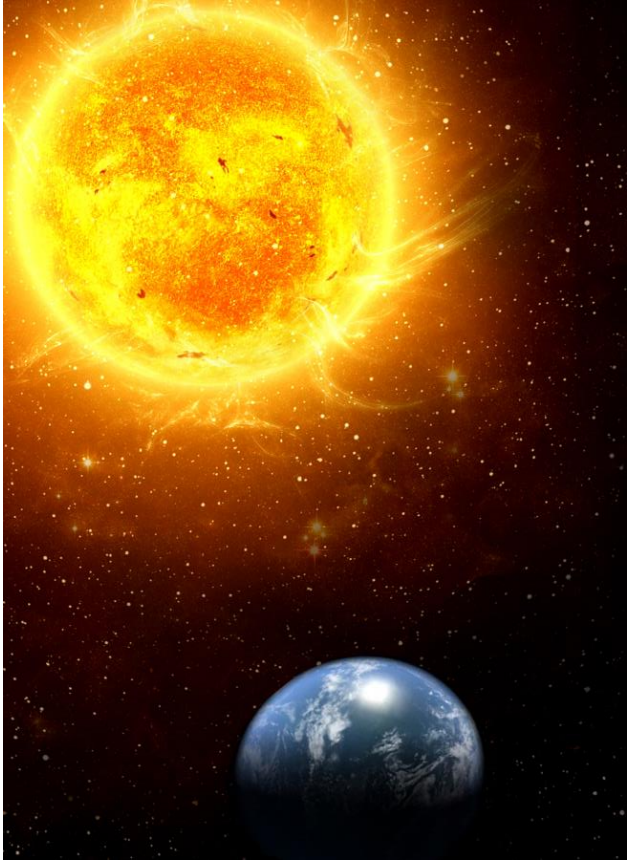


...and is
converted
into...

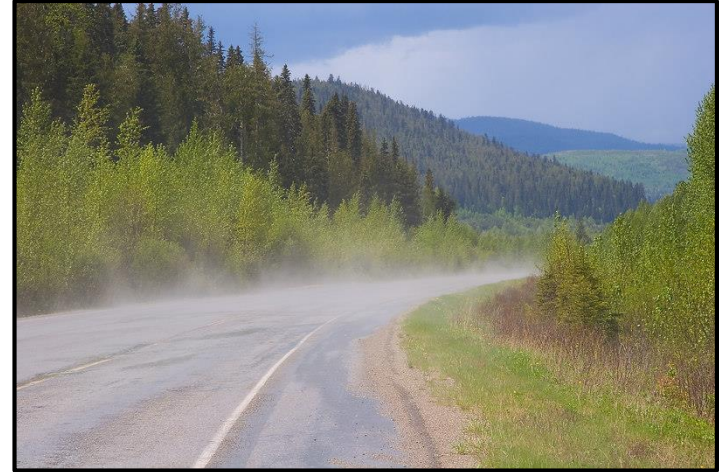
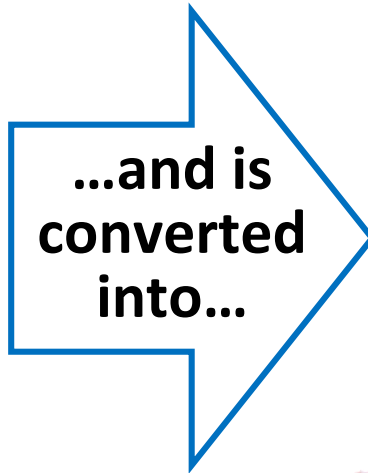


Electrical energy is
transported to your house
through power lines...

Energy Conversion



Light from the Sun is reaching the Earth...



Energy Transfer between Objects



Identify **all types of energy** as well as **objects** involved.

2017 US Electric Energy Generation

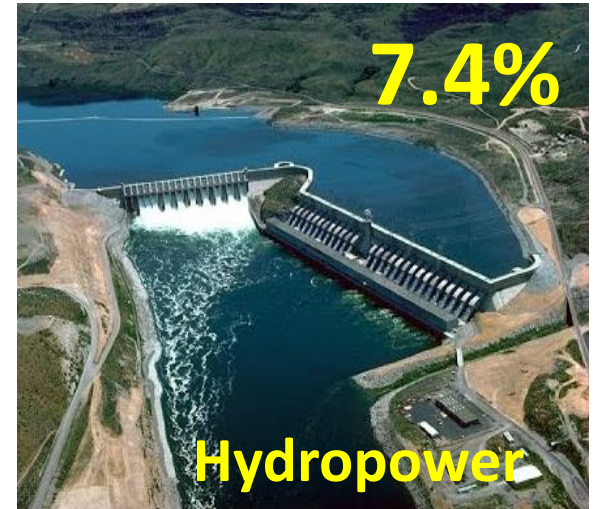


Other 2.3%



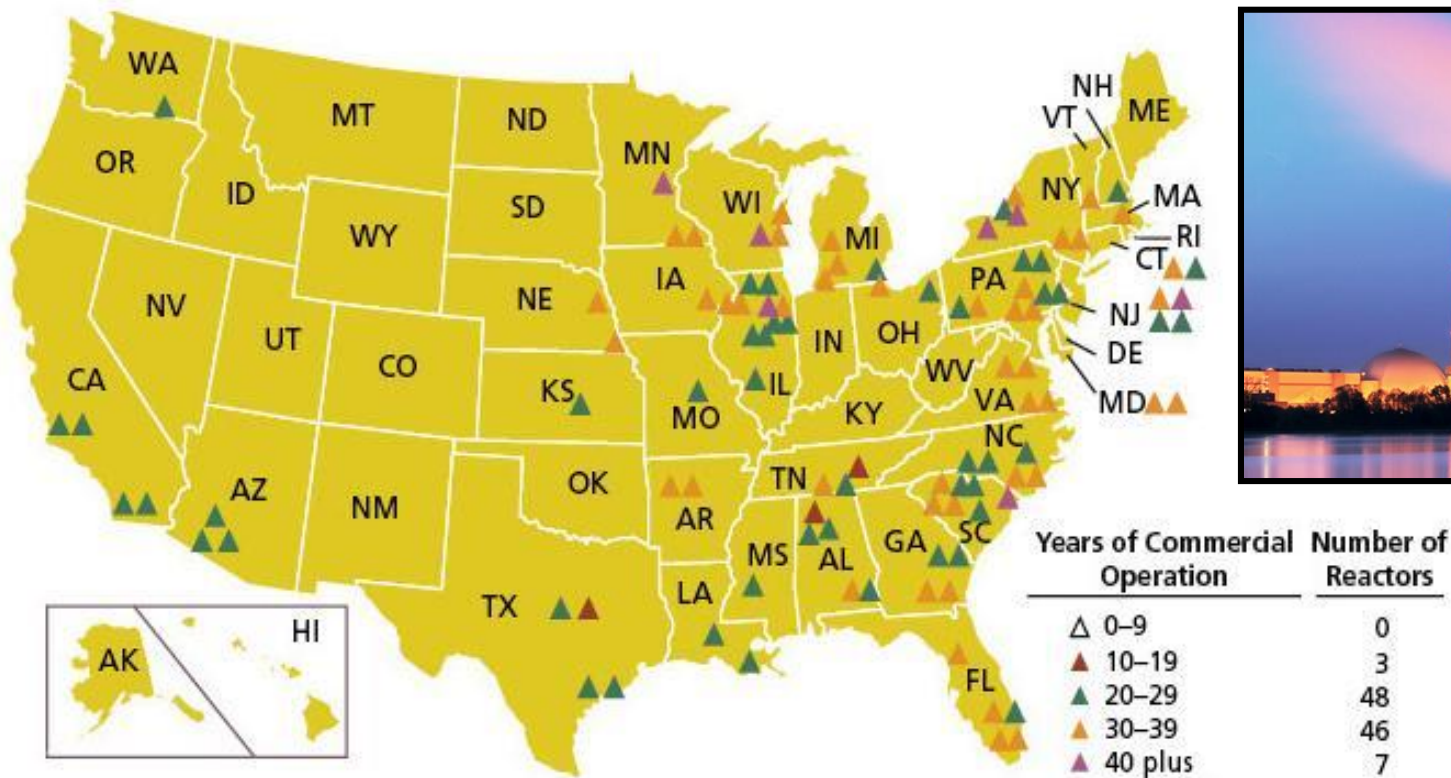
Fossil fuel 63%

+



Nuclear Power Plants

- As of 2017, nuclear energy provided ~10% of the world's electricity by means of 448 operational nuclear power reactors in 31 countries.
- Nuclear plants power about **20%** homes and businesses in the **United States**, and up to **30%** in the **European Union** as a whole.



**United States:
currently
~100 nuclear
power plants.**

Shoreham Nuclear Power Plant

The plant was built between 1973 and 1984 by the Long Island Lighting Company (LILCO) but **never operated**. Eventually bought by Long Island Power Authority (LIPA) for \$1 and fully decommissioned in 1994, the first commercial U.S. nuclear power plant to be dismantled.

- Construction cost: **6 billion dollars**.
- Most of it was passed on to Long Island residents in the form of taxes (3 percent surcharge is attached to Long Island electric bills starting from 1992 for 30 years... still ticking!).

Long Islanders pay some of the highest energy rates in the country...

