

URANIUM AT A GLANCE



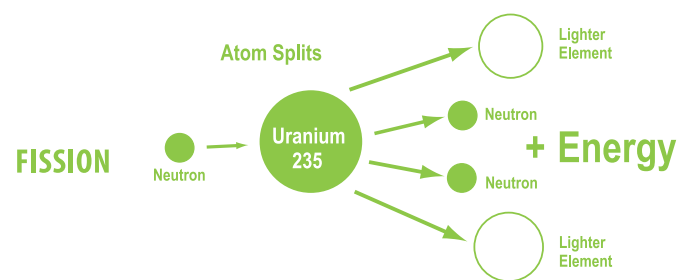
WHAT IS URANIUM?

Uranium is a naturally occurring radioactive element, that is very hard and heavy and is classified as a metal. It is also one of the few elements that is easily fissioned. It is the fuel used by nuclear power plants. Uranium was formed when the Earth was created and is found in rocks all over the world. Rocks that contain a lot of uranium are called uranium ore, or pitch-blende. Uranium, although abundant, is a nonrenewable energy source.

Three forms (isotopes) of uranium are found in nature, uranium-234, uranium-235 and uranium-238. These numbers refer to the number of neutrons and protons in each atom. Uranium-235 is the form commonly used for energy production because, unlike the other isotopes, the nucleus splits easily when bombarded by a neutron. During fission, the uranium-235 atom absorbs a bombarding neutron, causing its nucleus to split apart into two atoms of lighter mass. At the same time, the fission reaction releases energy as heat and radiation, as well as releasing more neutrons. The newly released neutrons go on to bombard other uranium atoms, and the process repeats itself over and over. This is called a chain reaction.

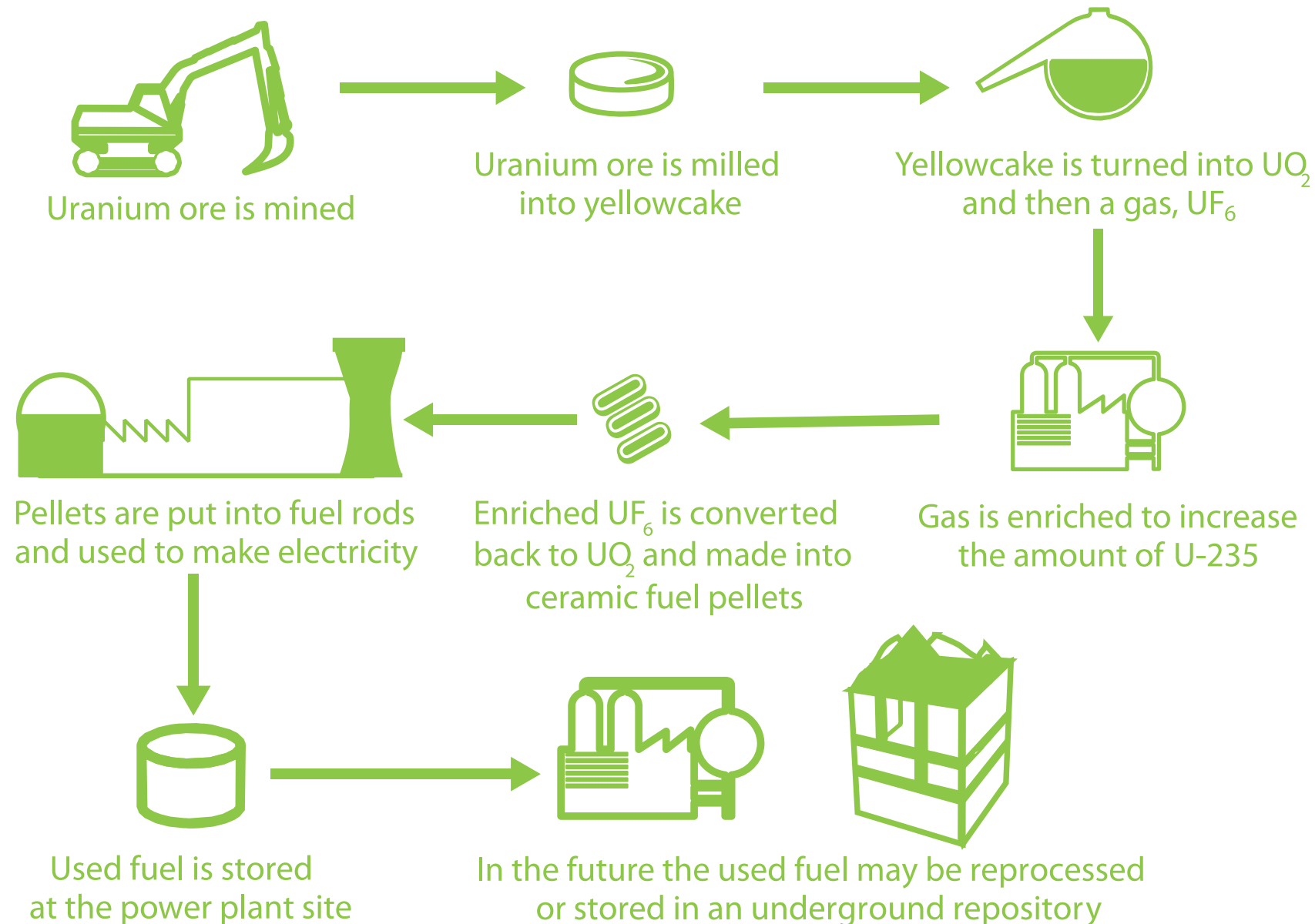
WHAT IS NUCLEAR ENERGY

Nuclear energy is energy that comes from the nucleus of an atom. Atoms are the particles that make up all objects in the universe. Atoms consist of neutrons, protons, and electrons. Nuclear energy is released from an atom through one of two processes: nuclear fusion or nuclear fission. In nuclear fusion, energy is released when the nuclei of atoms are combined or fused together. This is how the sun produces energy. In nuclear fission, energy is released when the nuclei of atoms are split apart. Nuclear fission is the only method currently used by nuclear plants to generate electricity.



URANIUM FUEL CYCLE

The steps—from mining the uranium ore, through its use in a nuclear reactor, to its disposal—are called the uranium fuel cycle



TOP NUCLEAR STATES



ILLINOIS



PENNSYLVANIA



SOUTH CAROLINA



ALABAMA



NORTH CAROLINA