

Nuclear power

Nuclear power is the most efficient energy source that we can control right now, but it is also the one with biggest risks. In a nuclear power plant there is a nuclear reaction that heats up water, setting it in movement that drives one or a few large turbines that drive generators to create electricity. The science behind nuclear fission is that they use the uranium-235 as fuel to absorb a neutron turning it, for a split second, into unstable uranium-236 with the excitation from the kinetic energy plus the power that binds the neutron to the atom core. Then the instable core splits into fast moving lighter elements, that are extremely radioactive, an enormous amount of energy, in form of kinetic energy or heat is generated, and a small amount of free neutrons is released that continue the chain reaction where the free neutrons bind to a new atom core and make them unstable. If the chain reaction is not being controlled it will end up in a meltdown. Which is when it becomes too hot so it melts through the chamber where the nuclear reaction takes place and the reaction will be unstoppable. That is exactly what happened in Chernobyl, Ukraine year 1986, when many people died both from the meltdown and from the radioactive exposures, and many different countries were affected for example Sweden, Finland, Belarus, Ukraine and Austria.

But as long as the nuclear reaction is being kept under control, it is a really good energy source that does not affect the climate changes. And it is one of the few energy sources that can sustain the world with enough of energy.