

## **Nuclear Power: Friend or Foe?**

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In 2003 a heat wave swept across Europe and killed about 22,080 people. Scientists think that this is most likely a result of global warming, a process in which pollution in the atmosphere traps sunrays so that they cannot escape into outer space. I believe that nuclear energy is a way to stop global warming and it is also an excellent source of energy. One of the major contributors to global warming is fossil fuels, such as coal and oil. If we were to use nuclear energy we would reduce the green house gas emissions that are causing global warming.

Nuclear energy is the energy that is trapped inside an atom, one of the smallest particles known to science. There are two types of nuclear energy, nuclear fusion and nuclear fission. Nuclear fusion is when the smaller part of the nucleus, the center of an atom, is joined with a larger nucleus and creates a great amount of energy. An example of nuclear fusion is the sun's heat and light traveling to the earth. The other type of nuclear energy is nuclear fission. Nuclear fission is when the nucleus of an atom bumps into a molecule and a huge amount of heat and light energy is released. Nuclear fission is the type of energy that nuclear power plants use. In nuclear power plants the nuclear fission occurs in small rods about the size of your fingernail. One of these rods can produce the same amount of energy as 128 gallons of oil. A lot of energy can be produced within a small amount of space. Nuclear energy produces no green house gasses and doesn't contribute to global warming. It also already accounts for 16% of the world's energy so it has been proven that nuclear energy can be very successful.

Nuclear energy is highly radioactive. The concept of radioactivity was discovered by Marie and Pierre Curie; they discovered the element radium. Marie Curie won the Nobel Prize for Physics in 1903 for her work on radioactivity, the first woman to win this award. The discovery of nuclear fission came when perhaps the most famous scientist today, Albert Einstein came up with  $E=mc^2$ . This formula dictates that energy is equal to the mass of an object multiplied by the velocity of light squared.

A drawback of nuclear energy is that radioactive waste is left over when all the energy from the uranium rods has been spent. The way that scientists deal with this problem is that they put the rods in pools of water and in about three months 80% of the radioactivity is gone; this process is called radioactive decay. The energy rods are stored deep under ground so there is no danger to people or animals. There have been instances when nuclear energy has been mishandled or malfunctioned and had terrible consequences, such as the nuclear power plant accident in Chernobyl, Ukraine. On April 26, 1986 an explosion and fire in a graphite core of a reactor caused radioactive substances to be released into parts of Europe. Thirty-one people were pronounced dead. The accident at Chernobyl shows that as advanced as human technology gets, we still need to be very careful with it.

There are over thirty diseases that fossil fuel miners can contract everyday including black-lung and anemia. Nuclear power does not do any damage to the lungs. Nuclear power plants also require a lot of workers, so not only would nuclear power lower the unemployment rate, but it would give employees a background in nuclear technology.

Radioactivity is everywhere around us. For example, one kilogram of coffee contains about one thousand Becquerel (Bq) of radioactivity, a radioisotope for medical diagnosis contains about 100

million Bq, and the average household smoke detector has about 30 thousand Bq. If all this radioactivity is around us it must not be as terrible as some people think.

For all these reasons I believe, and I hope that you do to, that nuclear energy is the best alternative energy source and will stop global warming. Something you can do to stop global warming and educate people about nuclear energy is contact Representatives, city council workers, or Senators and talk to them about how you can help. Even though there will be some problems along the way to making nuclear energy the main source of power, I believe that it will be worth it in the end because the global warming will have decreased significantly.