Druga gimnazija Sarajevo

Essay
Power stations in BiH

Eldin Hajric

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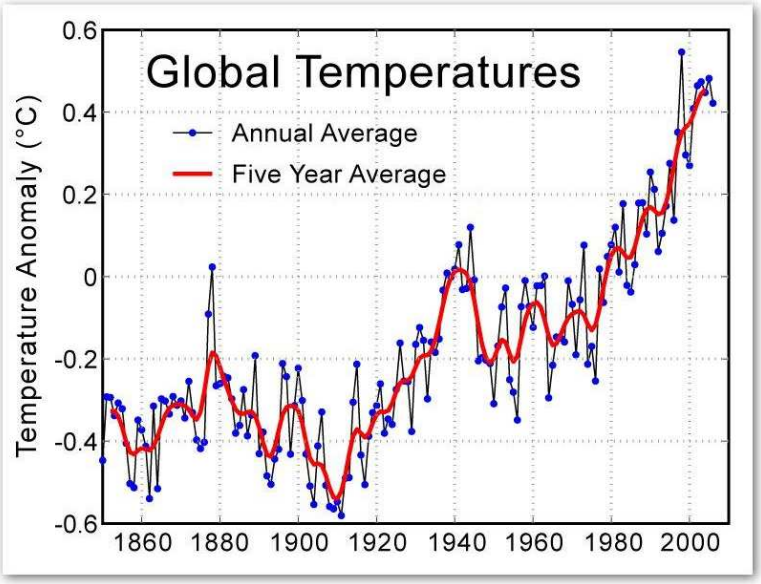
A power station is a facility which is used to generate electric power. [i]At the center of nearly all power stations is a generator, a rotating machine that converts mechanical energy into electrical energy by creating relative motion between a magnetic field and a conductor. In Bosnia there is a lot of hydro power plants, the biggest ones are: Grabovica, Jablanica, Salkovac, Visegrad etc.

There are three different types of power plants, thermal power plants, hydro power plants and solar power plants. In order to make our lives and the lives of our offspring better, we need to investigate and design new greener ways of converting mass amounts of energy into electricity. Solar power plants use an endless power, which is the sun. Beams from the sun hit mirrors which convert the suns energy into electricity. Approximately, every 7.2 hours, 3.6kWh electricity is produced. Solar power is clean and green and it can provide enough energy. However, the downside to this type of power is that it isn't cheap. Building a single mirror of 3.8 meters by 1.6 can cost up to $60.000. These mirrors are state of the art which capture the suns light, and turn it into energy. Thermal power plants are bad for the environment because they contribute to global warming by burning fossil fuels. These power plants are still in use today, because they provide a lot of energy and coal is cheap, so it can be burned in large quantities. Most houses today are supplied either by thermal or hydro. Thermal is very bad for the environment and since the industrial revolution kicked in global temperatures have been rising. Another type of power is wind power. Wind turbines are rotary devices that get provide energy using the air. This type of technology is not to be sniffed at as wind power can sometimes provide more energy than burning coal. There is a downside to this as well. Staying green and using wind powered turbines can cost a lot of money. Staying green and investing in these ideas will matter in the future. By burning excess fossil fuels we are creating green house gasses which are heating up the planet, thus destroying a lot of environments.



Here we can see how global temperatures have risen since the beginning of the industrial revolution till today.

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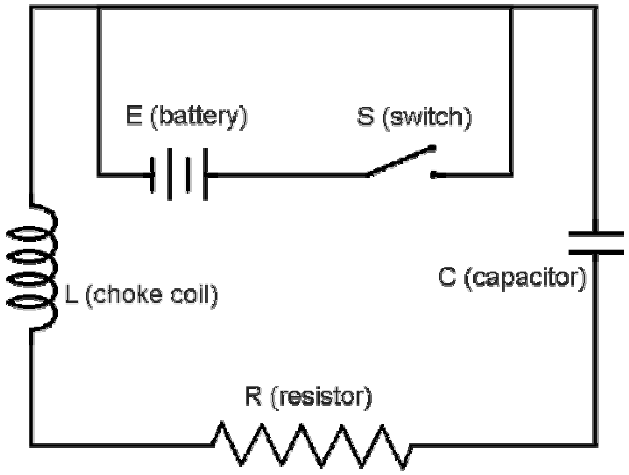
In Bosnia, the biggest hydro power plant produces around 170.000 cubic meters of water that reach speeds of 60 km per hour. This is enough water to fill up around 100.000 Olympic swimming pools every day. Hydroelectric stations have been up and running for about 100 years, and since been scientists have been searching for a way to harvest the energy better. The main idea behind these power stations is to convert the energy of flowing water into the flow of electrons or electricity. Most hydroelectric stations use either water diverted around the natural drop of the river such as a waterfall or rapids. In addition to this a damn is also built across the river to raise the river to create the drop needed to provide a force. Water in the higher level is collected in the reservoir, which flows into the pipe called the pen star which carries it down to a turbine water wheel at the lower water level. The water pressure increases as it flows down the pen star, it is this pressure

and flow that drives the turbine which is connected to the generator. Inside the generator is the rotor which is spun by the turbine. Electro magnets are attached to the rotor located within coils of copper wires called a starter. AS the generator rotors spin the magnets, a flow of electrons is created in the coils of the starter. This produces electricity that can be stepped up in voltage through the stations transformers and sent to this transmission lines. The following water the proceeds down the river. Most of our energy comes from the spinning of the rotor of the AC generator in power stations like Nuclear power stations, thermal and hydro power stations. An AC generator is a device which converts mechanical energy into electricity. The working of an AC generator is based on electromagnetic induction which states that whenever the flux passing through a circuit changes, an EMF is induced in it and a current begins to flow. The direction of this is given by Lenz`s law or Flemings right hand rule. Lenz`s law which is more commonly used states that the direction of the induced current is such as to oppose the very cause producing it.



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In our homes we use open electrical circuits which is very important as with them we do not use direct current. If we were to use direct current many more fires caused by electricity would happen and appliances would not function well and they would simple burn out. We need electric circuits for everything, they are what keeps our appliances running safely.

Today using thermal power plants is a big problem as it affects many factors. Countries in the EU have to follow certain conduct when it comes to power plants. For instance Nuclear power plants have to have the right materials, funding etc, thermal power plants have to have filters, can`t produced to many greenhouse gasses etc. the waste that comes out of these plants are often dumped into the rivers or oceans, this kills a lot of marine wildlife which local farmers depend on. These power plants also affect our environment; they can both help and destroy our environment. The waste produced in power plants is often thrown out in the forest, or lakes and seas. On the other hand solar and wind power can help with the environment by providing a clean way to get energy.

Word count: 1082

AOI:

CS- The energy that we get from power plants serves the community on a daily basses, by providing electricity people can do get on with their lives.

ENV- Power plants have a serious effect on our environment, they can help and help to destroy our environment.

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