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Day 5: Energy (Greener)

Introduction

Before stating three alternative sources of energy and give their advantages and disadvantages, I believe I should say what is an alternative source of energy for me and do a little research to fully understand and see what sources of energy are the most common. First, I believe that an alternative source of energy that is produced without the need of fossil fuels, and doesn't produces the products of a combustion reaction. In theory, alternative energy should not be harmful to the environment, nevertheless if the process is not completely correct it could harm the environment. Something that is true about the alternative energy is that in the present day we could not always rely on them, for example, sometimes the wind doesn't produce enough energy or we can only collect sun energy during the day, and some of the solar panels of today don't absorb all the possible energy.

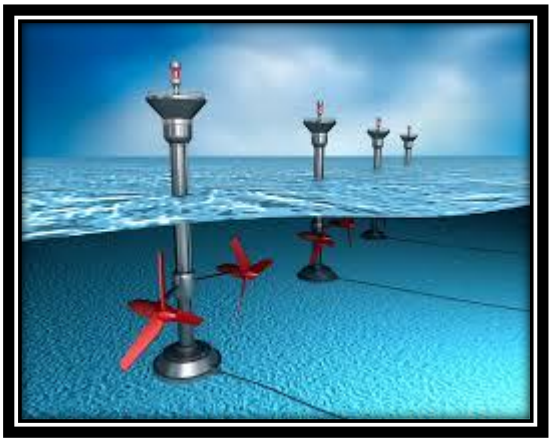
After this little introduction, I will search three alternative sources of energies and find their advantages and disadvantages. I will try to find some uncommon alternative sources, not sun and wind energy, because I truly want to know all the ways we can produce clean energy and what method we could exploit and begin to use more to become a green planet.

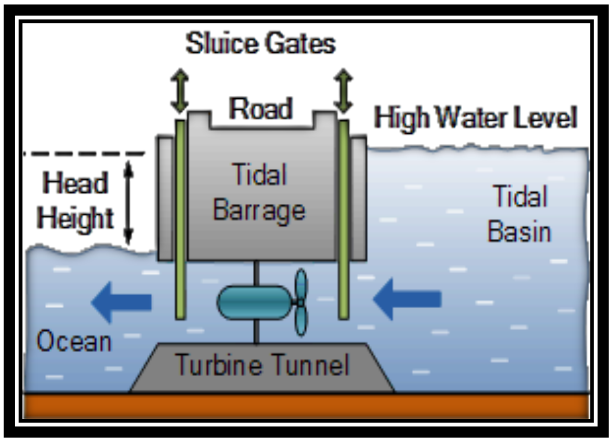
3 alternative energies

Tidal Energy

Tidal Energy is also known as Tidal power, this type of energy can be classified as alternative energy and renewable energy. This is due to the gravitational forces of the sun and the moon makes that great masses of water move making tides and producing energy. This produces energy because the tidal waves contain a great amount of kinetic energy, just like hydro energy. Both, tidal energy and hydro energy, produces energy with water and a turbine, the great difference relies in the fact that in hydro energy the water can only flow in one direction. Instead in a coast, sea or ocean the tide and wave move in and out the ocean, so it's necessary that the turbine can produce energy if it turns both directions (in/out) to fully take advantage of the kinetic energy of the waves, nevertheless, producing a turbine that can produce energy with water in both directions is more expensive that a single direction turbine.

Advantages	Disadvantages
Tidal barrages provide protection against flooding and land damage	Requires a suitable site, where the tides are tidal streams are strong
Is not expensive to operate and maintain like other renewable energies	Must be able to withstand forces of nature, such as hurricanes
A renewable energy that is free and clean and no waste bi-products are produced.	The fish and other sea-life can get stuck in the barrage
Has the potential to produce a great deal of green energy	Depends on the strength and flow of tides and waves
The high and low tides can be predicted years in advance	This only produces energy approximately for 10 hours.





Geothermal Energy

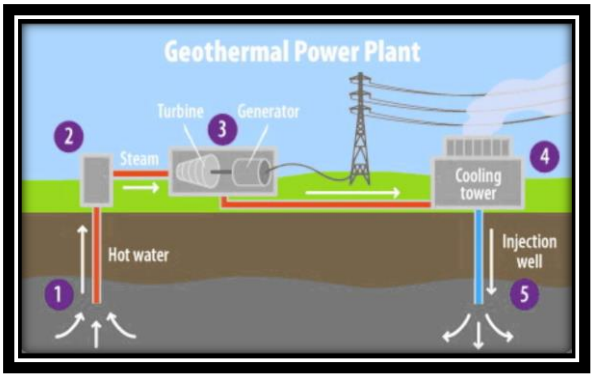
This type of energy makes use of the energy stored as heat in water that can be founded in the deep of the Earth's surface. Some of the most common examples of this type of energy are the Geysers and the Hot Springs that release a column of hot water. As the tidal energy, this is a renewable energy resource because it uses the natural heat stored deep within the Earth's core.

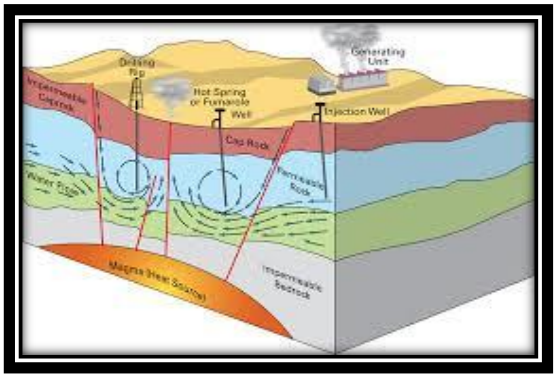
There are three types of Geothermal energy:

1. Direct
    a. This occurs when a source of hot water is close or on the Earth's surface, that can be used directly for heating.
2. Ground Source
    a. This occurs when the source of water in not close to the Earth´s surface but it is close enough to access using pipes or bore holes.
3. Power plants

a. This uses vertical boreholes deep underground to access geothermal steam and generate electricity.

Advantages	Disadvantages
Is an energy resource that can be used to provide heat and electricity	The heat is produced within Earth by radioactive decay
Hot water is free for extraction, in most cases.	Requires large areas of excavation
Produces little or no emissions.	Require drilling bore holes deep into the ground
Using this energy for heat applications can be 70% more efficient	May require the drilling of new wells after a few years of use
Ground based geothermal heat pumps for heating can be used almost anywhere	Not every area around the world has access to a geothermal source.





Biomass

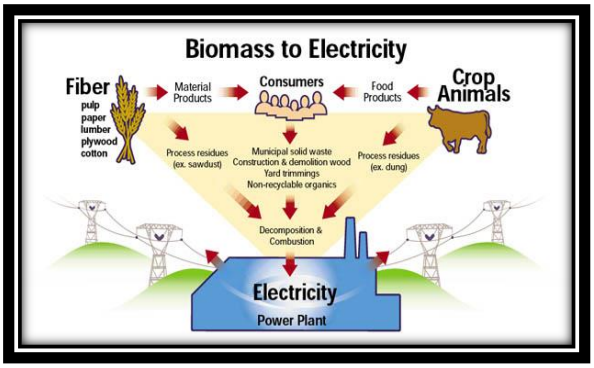
When we talk about biomass energy, we refer to any kind of non-fossil fuel that can be classified as organic, biological or made of a plant matter, that can be converted to usable energy. Is sometimes referred as a Biorenewable resource due to the vitality it has. There are different types of biomass, but the most common ones to obtain biomass energy is burning dead wood or sticks to obtain energy for heating, however this incineration is not very efficient because most of the heat energy produced goes along with the smoke. The difference between fossil fuels and biomass fuels is that the fossil fuels were formed millions of years ago while biomass is more recently created and, it's renewable because plants keep growing, and people constantly produce wastes that can turn to biomass.

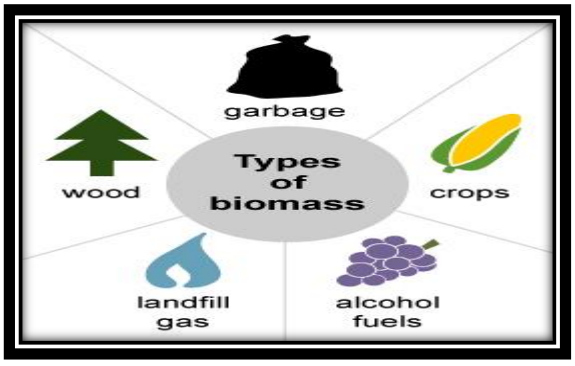
Biomass is available in all three basic forms of matter: Solid, Liquid, and Gas.

- Solid Biomass: This is also known as feedstock which are solid or compressed pieces of organic matter that release their energy through combustion.

- Liquid Biomass: Also known as biofuel, is any kind liquid produced from solid matter that is still growing or has been alive at some point which can be processed to produce a type of fuel.
- Gas Biomass: Also known as biogas, is any kind of natural forming gas given off by decaying plants, decomposing animals and manure that can be used as a type of fuel.

Advantages	Disadvantages
Renewable form of energy	Not entirely clean
Cost-effective compared with fossil fuels	It increases the risk of deforestation
Reduces de amount of waste in landfills	It is inefficient compared with fossil fuels
Can be used to create different products	Requires a lot of water
It is widely available and carbon neutral	They are very expensive to produce.





Which energy source do you think is the most sustainable long-term? Why?

I think that the energy source that is most sustainable in a long term is the tidal energy. Because this type of energy is made from the water and the gravitational forces, and it's very difficult that gravitational forces or water disappear from the Earth. I think that if experts work with this type of energy they can improve it, so it can avoid great damages after natural disasters and to be friendlier with the ocean life and not to harm them.

What is one innovative way to produce energy that totally inspires you and explain why you feel so strongly about it.

I think that one way to produce energy that is very innovative and truly inspires me is the biomass energy. I have this feeling because the nature itself is giving us resources to replace the fossil fuels that release a great amount of carbon dioxide and carbon monoxide. I believe it's beautiful that with biomass we could take advantage of our wastes and convert them in potentially 100% clean energy. This energy resource also inspires me, because this way to produce energy is available to all the people, not like

other types of energy. With biomass every person could begin to make their wastes into energy.

Social media post

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